

THE ROSE IN AMERICA



J. HORACE MCFARLAND

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THE ROSE IN AMERICA

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PLATE I. The *Wichuraiana* Hardy Climber, ALIDA LOVETT, as growing
in the Author's garden. (Originated by the late Dr. W. Van Fleet:
Rosa Wichuraiana × *Souv. du President Carnot*.)
(See page 33.)

THE ROSE IN AMERICA

BY

J. HORACE MCFARLAND

AUTHOR "GETTING ACQUAINTED WITH THE TREES"

"MY GROWING GARDEN," ETC.

EDITOR "AMERICAN ROSE ANNUAL"

ILLUSTRATED WITH
PHOTOGRAPHS FROM THE AUTHOR'S GARDEN
AND FROM OTHER GARDENS



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PREFACE

THIS book is written for two reasons, the first of which is that I wanted to write it, and the second, true though conventional, that there seems to be a need for considering the rose in America from an American standpoint.

It may justify the first reason to recite the fact that, having in 1915 been brought into an intimate relation with the American Rose Society through an agreement to make for it each year an "American Rose Annual," I came into progressive contact with the friends of the rose everywhere. I had all my life been a theoretical rose-lover, but this labor of love for the rose impelled me to make my relationship practical.

This increasingly pleasant rose contact has reached into every state and province of the United States and Canada, as well as across both oceans to all Europe, to the Philippines, Japan and China, to Australia, Ceylon, and New Zealand. It has made possible the assembling annually of a record of American rose progress, with sidelights from all the world. Continually, as I have faced the question mark which seems to be a part of the countenance of every American rose-lover,

I have felt the need for an interpretation from the American standpoint of the up-to-date rose-lore that has thus been developed.

So the book has happened! Obviously I need make no apologies for the liberal quotations it includes from the "American Rose Annual," because that work has kept close to the doings of American rose-lovers and rose-workers.

No one but myself is responsible for what I have written, though some rose friends have kindly read the manuscript. All of it has been scanned by Mrs. Francis King, President of the Woman's National Farm and Garden Association, and by Dr. L. H. Bailey, horticultural author and editor; and certain chapters have had the critical attention of Mr. E. H. Wilson, the famous plant collector, now Assistant Director of the Arnold Arboretum, and of Mr. Robert Pyle, President of the American Rose Society.

The book is unusual in that through the kindly indulgence of the publishers I have been accorded the utmost freedom in making it. Not many works are thus written, illustrated, printed and bound under one eye.

J. H. McF.

March 15, 1923.

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THE ROSE IN AMERICA

CHAPTER I

IS THE ROSE IN AMERICA?

THE first answer to the query of this chapter heading is likely to be a surprised or a scornful affirmative, coming from the casual reader who easily knows that there are many roses of many sorts in this broad land. The botanist, too, will tell me that with many distinct native species, ranging from the Gulf of Mexico to Hudson Bay as well as from the Atlantic to the Pacific, the rose assuredly is in America, and has been from time immemorial. The woman who enjoys and the florist who produces the marvelous under-glass-grown buds and blooms that are finer and more abundant in America than anywhere else in the world will wonder that such a question should be asked.

But the second thought of the rose observer may cast doubt on the easy affirmative. It is true that there are native species in the land, but are they where even a small fraction of the people

ever note their beauty, or are they constantly being pushed back by civilization toward the extinction point?

And the roses in our gardens, the roses in the shops of the florists—are they *of* America, even though they are *in* America? How many gardens are without roses, how many dooryards are roseless, as compared with, for example, rural England?

The profusion of roses seen at a notable festive occasion, the lovely blooms that show in our all-too-few municipal rose-gardens, the splendid display sometimes seen on great private estates—these but emphasize the absence of the rose where it would best carry its message of sweetness and cheer, in and about the majority of American homes.

That first great American, George Washington, is credited with having grown from seed at Mount Vernon a hybrid rose based on the native *Rosa setigera*. He named it Mary Washington, permitted it to be grown and sold, and thus provided a basis for rose history in America more than five generations ago. His new rose was truly and definitely American, and of American lineage. Yet today by far the major part of the roses in commerce are of comparatively recent foreign

origination, and we are only just beginning to really have roses "made in America."

The best available information indicates an annual production and sale in America of approximately ten million rose plants of all sorts. Counting on twenty million homes in the United States, this assigns but half a rose to each; or if it be assumed that half the homes are so situated that there is not available enough sun-touched arable soil to accommodate one rose, the proportion is yet trifling. When one considers that many single gardens have each a hundred roses or more, and that hundreds of thousands of rose plants are confined in great greenhouse establishments, to bloom for the cut-flower market, the inference is unavoidable that most American homes are without any roses of their own, and further doubt is cast on the universality of the rose in our land.

Examined from another angle, that of rose origination, it appears that the example set by George Washington has not been sedulously followed. Consulting the American Rose Society's "Official List" of roses introduced in America, it appears that while 611 roses are named as American introductions within two centuries, but 445 of them are reported to be yet extant—and less than 200 are easily obtainable. While 181 persons

are credited with either originating or introducing these roses since the time of Washington, the varieties now in commerce that are truly American in origin gather under the hands of a bare half-dozen hybridizers in the United States and Canada, and these men, since the passing of the lamented Dr. Van Fleet, are working mostly for greenhouse or "forcing" roses.

Indeed, fully ninety per cent of the roses now in American gardens are of foreign origination, suited to foreign climatic conditions, and mostly resting on the same old *Rosa chinensis* base which is essentially uncongenial to large areas in America. Later European hybridizations, bringing into the rose circle other Chinese native sorts, have as yet but little modified the general average unsuitability for our climatic zones of the varieties originated in England and Ireland, in Belgium, France, Holland and Germany.

This point of unsuitability is easily illustrated by citing just one instance—that of the charming Wichuraiana climber, Aviateur Bleriot, which is a definite golden yellow in its French home and all over the continent of Europe, but which bleaches out to nearly white under our sharper sunshine, less modified by humidity.

True, we do have in this broad land locations

in which European roses flourish. The rose wonders of the Pacific Northwest, wholly defying latitude, vie with the rose profusion of the Los Angeles region in California. The "Sunny South" is in part most hospitable to roses, and there are rose oases in Canada, in West Virginia, and I doubt not in many other American locations, where the Queen of Flowers holds sway. Broadly, however, the conditions in respect of these roses made abroad are in most parts of America as I have stated.

Perhaps some reader will urge the appropriateness of this, inasmuch as America is not a land longer seriously populated by natives. A polyglot people might be expected to content itself with roses from anywhere and everywhere. It may well be noted, however, that the people of America become generally American in the second generation, or are at least expected so to become, while the rose of foreign blood does not materially adapt itself to the differing environment.

In one class we have in America developed roses that are our roses, reveling in our sun and wind, our soil variations and our climatic changes. Hardy climbing roses of a type that has compelled admiration and acceptance even in the rose centers of Europe have been "made in America."

Dr. Van Fleet's great contributions to the rosi-fication of America in his Silver Moon, American Pillar, Dr. W. Van Fleet, Alida Lovett,* and others; Mr. Walsh's wonderful hardy and husky productions in Hiawatha, Evangeline, Milky Way, the better-than-Crimson-Rambler Excelsa, and their sisters; Mr. Farrell's Climbing American Beauty, Purity, and Christine Wright—these are genuinely American, because they combine here rose strains from all the world that fit our climate, and thus parallel the human Americans. These splendid roses, adaptable, vigorous, enduring, beautiful in bloom, are ours, but they are by no means yet widely distributed among us, principally because we have taken our rose fashions as well as our dress fashions from abroad. Only the few among us have yet appreciated at their true garden and home value the roses that are here, ready to hold firmly our railroad embankments in a grip of beauty, to garland our fences with June glory, to clamber over entrances in colorful abandon.

It will aid in the better understanding of this effort to make the rose truly universal in America if we look squarely at the land divided into rose

*See Frontispiece for an effect obtained in the Author's garden with the large-flowered hardy pink climber, Alida Lovett, which is a strong-growing hybrid between *Rosa Wichuraiana* and the Hybrid Tea, Souv. du President Carnot. The color is delightfully clear and pure.

zones as to frost endurance. The observers in the Bureau of Plant Industry of the United States Department of Agriculture compiled for the American Rose Society a "Rose-Zone Map," reproduced on page 183, which has excited much comment and some criticism—the latter mostly from those who fail to note the basis of the map. The various areas shown are those in which certain classes of roses are presumably hardy *without protection*. Any rose is "hardy" anywhere if sufficiently protected, and the fact that the rose prosperity of the lovely Finger Lake Region in New York exists in the white portions of the map where only the Rugosas, the Hybrid Perpetuals, and some rose species endure the winters in the open, is emphasized by the secure protection methods worked out by some of the ardent rosarians of Auburn, Syracuse, and Rochester, who so love their favorite flower that they are willing to meet the frost susceptibility of its European-bred varieties.

No one need be dismayed at this map, or be deterred from having roses, even if he lives in the relatively small area shown by its vertical shading to make their culture somewhat of a sporting proposition.

Aside from its purpose of information, this map is presented to point an earnest hope for the early

production in America by American hybridizers of the "dooryard roses"* that should endure average climatic rigors with the indifference of the spirea, the lilac, the peony, and other cherished garden adornments. It is when these roses shall be generally available and generally in use that we can be sure that the rose is really in America.

Until that time; until the motto of the American Rose Society—"a rose for every home, a bush for every garden"—shall have been realized, we can only say in truth that the rose is in America as a welcome guest, but is not yet in the family.

Let every American to whom its scent is the sweetest of all perfumes aid in speeding the time when all the land shall blossom not only as but with the rose.

*Progress in the direction of adaptable and vigorous roses for America is reported upon elsewhere in this volume, in the showing of Mary Wallace (see Plate II), and Mrs. Sarah Van Fleet, or "W. C. 237" (see Plate III), two productions of the late Dr. Van Fleet that are being made available through an arrangement consummated with the Department of Agriculture by the American Rose Society.

CHAPTER II

THE USUAL ROSES

BECAUSE the rose is unique among plants in acceptance, without explanation or qualifying word, we have taken it, as our forefathers for thousands of years have taken it, as a matter of course. We explain to the children that the lilac is a shrub, the peony a herbaceous plant, the cabbage a vegetable, the apple a fruit, but the rose is—just a rose.

Upon human language the rose has also engrafted itself as an entity requiring no considerable variation. That eminent botanist and plant collector, E. H. Wilson, to whom, through his researches all over the world for the Arnold Arboretum we owe so many of our finest ornamental shrubs and not a few rose forms hitherto unknown to cultivation, and who is as well a delightful and authoritative writer on plants and trees and an entertaining speaker, has thus written in his "Aristocrats of the Garden":

The rose holds a unique place in the thought and estimation of civilized man. . . . The rose is the one flower

whose name is common to the polyglot people of this land. In English, French, German, Danish, and Norwegian its name is Rose; in Italian, Spanish, Portuguese, Russian, and Latin it is Rosa; in Swedish it is Ros, in Dutch Roos, in Bohemian Rouze, in Hungarian Rozsa, and in Greek Rhodon. . . . It is the national flower of one great race, but it is loved by all and is the monopoly of no one race or creed.

The rose is old, very old—probably the oldest cultivated flower. When it was in Athens 2,000 years ago first crowned the Queen of Flowers, it had long reigned unofficially. A modern priest of its worship, Jesse A. Currey, thus writes of the rose:

While its origin is shrouded in the dim mists of antiquity, we find in the Bible, in Greek mythology, and in the writings of the ancient Roman philosophers and poets, evidence that it was cultivated in the earliest times.

One wonders just what were the cultivated roses that excited the enthusiasm of Solomon, of Isaiah, of Homer, and of Sappho. That they were not the simple natural or “wild” roses of five petals is apparent from the description by Herodotus, about 450 B.C., of the rose-garden of King Midas, in which he found roses with sixty petals and a most delightful perfume. The rose has always shown a remarkable tendency to multiply its petals, and thus become “double,” wherefore it is probable that the ancients enjoyed varieties of impressive substance and size as well as beauty

and fragrance. Indeed, I confess to a real thrill at learning not long ago that the distinct York and Lancaster rose in my garden (credited to Nicholas Monardes in 1551) had been grown continuously in England by one nursery firm for 149 years.

Broadly speaking, and wholly for the convenience of this chapter, it may be well to consider the roses in America of today as including two classes—the usual or familiar roses, and the unusual roses that we see rarely or not at all. The latter may be taken to comprise the native wildings and the wildings of other countries, as well as the “old-fashioned” summer-blooming sorts of the early American gardens, to which they were brought by the pioneers, of whose European homes they remained a fragrant memory. The usual or familiar roses are those we know best and constantly have contact with in the catalogues, the gardens, the flower-shops. It is of the latter particularly this chapter aims to tell, with such necessary classification as will intelligently promote both rose understanding and rose prosperity.

Avoiding botanical discussion, it is yet desirable to look back to the main sources of these present-day roses, because of the relation of these sources to much-desired vigor, hardiness, beauty, form, fragrance, size, color, and continual blooming

habit in the roses of our gardens. Every garden rose of today relates to several natural, or native, or wild roses. It should here be noted that the native American wild roses are not "everblooming," or rather recurrent-blooming, to use a more accurate adjective. Lovely as they are, they bloom but once in each growing season, and their use in hybridizing does not tend toward repeated bloom in the progeny.

All our everblooming roses depend, therefore, on the native forms of other lands. It is to these native or wild roses of China that we largely owe our current garden roses, although in some important relations the approach has been through India. It may have been the sojourn in that land of warmth and sunshine of the forms of *Rosa odorata* that got them so out of step with winter that they changed their habit of annual blooming to the gracious practice of blooming on new growth as long as it continues to be produced.

Let me here quote again from E. H. Wilson, to emphasize the value of the work of those devoted lovers of the rose in all ages who have hybridized and cultivated it:

Roses as ordinarily understood are "made," not discovered wild. . . . they are the product of the gardeners' skill. I wish I could take the readers of this work to the

mountain fastnesses of central and western China, and to certain remote parts of Japan, and there introduce him to the wild types—the raw material—from which have been evolved our Killarney, American Beauty, Lady Hillingdon, Mme. Caroline Testout; our rambler and Wichuraiana hybrids and innumerable others, and his astonishment would be profound. Truly it hardly seems credible that the roses of today had such lowly origins. . . . Be it remembered that our present-day roses owe their principal origin to forms cultivated, we know not how long, by the flower-loving Chinese.

It is further to be hopefully noted that out of the great array of the world's native or wild roses barely a score have as yet been availed of by the hybridists. The unused American natives, the lovely Chinese forms of which I shall later treat for their value as shrubs, all these are yet to be bred into what we may hope to be the truly American rose, of endurance, vigor, disease-resistance, beauty when out of bloom, fragrance, form and color yet unknown.

With this foundation we may separate the various classes of garden roses now in America.

The Hybrid Tea roses dominate our gardens today and are therefore here first defined. They are of comparatively modern origin. Hybrid Teas La France, sent out in 1867 by the French rosarian, J. B. Guillot (as a Hybrid Perpetual, remember—he did not know he had

originated a new rose!), was the result of a cross between a hardy June-blooming Hybrid Perpetual, Mme. Victor Verdier, and a tender constant-blooming Tea rose, Mme. Bravy. The botanical basis of the class is thus on the *Rosa odorata* primary parentage of the Tea roses, and on the decidedly mixed origins of the Hybrid Perpetuals, from *Rosa chinensis*, *R. gallica*, and *R. damascena*.

It is proper here to note that English writers on the rose claim that Cheshunt Hybrid, sent out in 1873 by Paul & Son, was the first Hybrid Tea, though it was not then so recognized. Indeed, it was not until Henry Bennett had, between 1882 and 1890, sent out some "pedigree roses," that English rosarians recognized that a new race of roses had been originated.

These roses in general are of more vigorous and upright growth than the Tea roses, and are comparatively hardy to frost, though not dependably so without protection where temperatures of 10° above the Fahrenheit zero continue for many days. They show the foliage tendencies of their Tea parentage, and have the invaluable quality of blooming with more or less freedom on the new shoots of the current year, depending mostly on the variety. The plants are not in themselves pleasing or ornamental, either in form or habit,

for which reason they are usually grown in groups or beds and not in association with other plants.

The dominating merit of the Hybrid Tea roses, after their frequency of bloom, is the richness, variety, and delicacy of their coloring, together with large size and elegance of form in bud and flower, and, usually, pleasant fragrance. They bloom in early summer, even when the plants may have been set out but four or five weeks previously, and tend to bloom again, if kept growing and with undiminished foliage, at recurrent periods as they develop new growth throughout the summer and autumn. Some varieties bloom exceptionally well at one season, and some at another, but few being "always in bloom" as one finds the remarkable scarlet-crimson, loose-flowered sort bearing the awkward name of Gruss an Teplitz.

Incidentally, it is informing to state actual bloom performances as a sort of standard to use. In the well-handled garden of Capt. George C. Thomas, Jr., near Philadelphia, Multiflora-root plants of Gruss an Teplitz produced an average of 107 blooms in a season, as follows: May and June, 37; July, 26; August, 14; September, 15; October and later, 15. The average established Hybrid Tea will hardly give half as many flowers in a season.

It is one reason for the growing favor shown to the Hybrid Tea roses that the patient amateur who, after beginning with dependable sorts (see Chapter XI), keeps trying among the hundreds of varieties until he finds such as will give remarkable results in his own garden. The element of chance, the superb beauty of the blooms when they come, tend to make adventures in these roses truly fascinating; a so-called "sporting proposition," as it were.

The color range in the Hybrid Teas by far exceeds that available in any other class. From pure white through almost infinite gradations in pink and red shades to deep crimson and crimson-scarlet, to deep yellow, to wonderful tones of copper and orange, all shaded and intermingled in bewildering beauty, there is great and increasing variety of choice.

(Detailed discussion as to planting, culture, pruning, protection, and the general nurture of this and other classes of garden roses will follow in subsequent chapters.)

Pernetiana roses, often so separately described in catalogues, are really Hybrid Teas into which Pernetianas has been infused some portion of the hardy yellow Austrian Brier blood, usually referred to *Rosa foetida* (though *R. lutea*

sounds better!), and best known to us in America through the Persian Yellow and Harison's Yellow sorts. The first of these hybrids, and the most of them to date, have been produced by Monsieur Jules Pernet-Ducher, a notable French rosarian, for whom the class is named. The intensification of the yellow shades, and the introduction of shades of copper and orange, have been through this remarkable hybridization. These roses have usually heavier and darker foliage than other Hybrid Teas, which is hard in America to hold on the plants because of peculiar susceptibility to the leaf-disease "black-spot." (This susceptibility varies in varieties, however, and the later forms are much improved. With the control means detailed in Chapter IX this disadvantage is greatly reduced.)

Other hybridizers have also succeeded in the Pernetiana class, and twice within less than five years the highest rose honor in the world was given at the Bagatelle trials in Paris to an American-originated Pernetiana variety—Los Angeles at first, in 1918, and then Miss Lolita Armour, in 1921. Mr. Fred. H. Howard, who has won this triumph for America, continues actively at work in hybridizing, and many other of his productions are valuable additions to our garden roses.

The Tea roses were the first of the "everblooming" type to be developed. They rest botanically on the Chinese *Rosa odorata* and its various forms, which reached England early in the nineteenth century.* It seems certain that the patient flower-loving Chinese had developed the original wild forms very considerably before travelers found and took to Europe the first roses of this class. The name arose from the dainty "tea" perfume characteristic of the class, which includes flowers of great elegance in form as well as variety in color. Although considerably displaced by the Hybrid Tea sorts, there are many Tea roses of great value and beauty.

Of somewhat less upright and vigorous growth than the Hybrid Teas, and seldom making bushes so large, these roses nevertheless possess the merit of continuously growing and blooming. They are not frost-hardy north of Richmond or Washington, and require protection—though it is but honest to say that I have had them come through in my Breeze Hill garden at Harrisburg (latitude, 40°15'; elevation, 490 feet above tide) with no more protection and no more winter injury than the Hybrid

*That careful English rosarian, Rev. J. H. Pemberton, in his notable book on "Roses: Their History, Development and Cultivation," insists that in 1810 and again in 1824 there came to England from China first the "Blush Tea-scented," and then the "Yellow Tea-scented rose," which were in France interbred to begin the Tea rose as we know it.

Teas. Indeed, the dividing-line as to appearance and hardiness between the Tea roses and the Hybrid Teas is invisible to me, and, I imagine, to any ordinary rose-lover.

The slight differences between these two closely akin classes suggest that for all practical purposes they may be treated alike. The best Tea roses are stronger growers than the average Hybrid Teas, and such sorts as Mrs. B. R. Cant, Harry Kirk, Mrs. Herbert Stevens, Maman Cochet, and Wm. R. Smith work in ideally with the average of their presumably hardier and more upright-growing sisters. Even the old Safrano lives comfortably with the Hybrid Teas.

I have emphasized this similarity because in the course of some years of rose correspondence I have found a lack of understanding that disturbs many amateurs. Both Teas and Hybrid Teas bloom on wood of the current season's growth; both have the same need for rich soil and good culture, the same need for protection against insects, diseases, and frost, require the same sort of pruning. If I had to make a comparison between them I should suggest that they are like a pair of song-birds, the male of which is a little larger, somewhat more showy, and considerably noisier.

The Polyantha roses properly enter here, in

juxtaposition to the other classes which claim to be "everblooming," for they more nearly Polyanthas deserve that reputation. The name is unfortunate and confusing, but will probably stick to these good roses. It was first applied to them by the French writer Carrière in 1884. They are allied to the *Rosa multiflora* family, of which the familiar Crimson Rambler climber is the outstanding example. The Polyantha roses of commerce seem to be hybrids of *R. multiflora carnea* and *R. chinensis minima*, the Fairy rose, with other modern varieties.

The distinguishing characters of the class are the dwarf habit—the plants rarely exceed 1½ to 2 feet in height—and the continual production of large clusters of small flowers. The plants are more shapely than other roses, usually have rather smooth shoots, and are particularly serviceable for bordering or edging the taller roses.

First sent out as "Baby Ramblers," though they do not ramble, these dainty little roses deserve the wide favor they have attained. The magenta hues of the earlier varieties have been replaced by clean and clear shades of pink and crimson, and sorts running into scarlet are appearing. There are good white varieties and several in pale yellow and apricot, while certain sorts classed



PLATE II. The new Hybrid China rose, Mary WALLACE ("W. C. 124"), as growing at Bell Experiment Plot, Maryland, where it was originated by Dr. W. Van Fleet. (See page 36.)
Reprinted by permission from the "American Rose Annual" for 1921.

as Polyanthas seem to run into the Teas—for example, the exquisite Tip-Top, with its dainty little button-hole buds, and the notable Gruss an Aachen, which is a lovely Tea rose, all but the label. The attribute of fragrance is absent or nearly absent in most of the Polyanthas.

The Polyantha roses run with the Teas and Hybrid Teas as to need for protection against severe cold. Thus they fit in well with the two other classes that with them make up the ever-blooming roses for America.

The Hybrid Perpetual roses are also called Remontant. Both designations are misnomers so far as bloom is concerned, and both are accurate in respect of the enduring or “perpetual” plants. They are certainly hybrids as to parentage! The botanist Wilson explains it thus: “The China monthly rose (*R. chinensis*) gave rise to the Hybrid China roses. The Hybrid China and the Hybrid Bourbon (itself a hybrid between *R. chinensis* and *R. gallica* or *R. centifolia*), crossed with the Damask rose (*R. damascena*) gave rise to the Hybrid Perpetual or Remontant roses.” It may here be parenthetically remarked that when this combination was joined with the Tea rose (*R. odorata*) to form the Hybrid Tea class, it amounted to combining

the outstanding and dominant rose classes of nearly half the world.

As a class, the Hybrid Perpetuals include the largest and boldest roses, in all shades from the purest white to the deepest crimson and scarlet, but with, as yet, no definite yellow. Bailey's Standard Cyclopedia of Horticulture asserts that these roses comprise "by far the largest and most comprehensive division," though in number of varieties now in commerce the Hybrid Teas increasingly dominate.

The outstanding feature of the Hybrid Perpetual roses is their hardiness over most of America. They are generally of stiff, upright growth, with rough and deep green foliage, not very abundant, and not by any means covering the bare legs of the mature plants. For this reason these roses do not mingle agreeably with shrubbery or with other roses, and are best grown in beds or groups by themselves, though the Polyanthas may be used to border such plantings. This is the better practice for the additional reason that the Hybrid Perpetuals bloom in a great show of their splendid flowers in early summer, and but sparsely, if at all, thereafter; wherefore the bright and continuous bloom of the Polyanthas serves to mitigate the bareness of the Hybrid Perpetual plantings.

I have mentioned the large size of the great, open, double, often cupped blooms of the Hybrid Perpetuals. Some of them—as, for example, Baroness Rothschild and Clio—produce their huge flowers singly, on bold stems, each superb bloom set in a chalice of beautiful deep green leaves. Most of the varieties are richly fragrant, though the absence of that quality is the one defect of the wonderful pure white Frau Karl Druschki—probably the most widely known and grown outdoor rose in America, if not in the civilized world of the North and South Temperate Zones.

The place of the Hybrid Perpetual rose in America is in the parks and in the gardens where space can be afforded for it. In the smaller gardens, about the home, it is less desirable, by reason of its leggy habit, than certain other roses of one bloom-crop that will be mentioned further on. Yet here I must enter an exception, for in the “favorite dozen” bush roses reported on page 199, the Hybrid Perpetual Frau Karl Druschki is certainly in place, not only because of the immense and regal white flowers it shows in June, but because these flowers continue to be produced at intervals, particularly after midsummer, until severe frosts suspend all growth and bloom. My own pet dozen would also include the old and fragrant

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General Jacqueminot (suspected of being a Hybrid China, by the way) in bright crimson, and I would hesitate to omit George Arends, the scented and richly pink beauty.

The Hybrid Rugosa roses are of marked individuality and of yet unrealized garden value.

Hybrid Rugosas Here again we owe much to the Orient, for it was in 1796 that certain English plant collectors brought from Japan the *Rosa rugosa*, also found in Korea and in extreme northeastern Asia. The hybrids are usually of rampantly vigorous, upright growth, with heavy canes and thick, wrinkled leaves, curiously pale or bluish green in some sorts. Their flowers are large, very fragrant, well formed, but mostly rather loose, and of excellent color range, though not touching yellow. The blooms of most varieties last for a day only, but they are produced with the greatest freedom in earliest summer and sparingly thereafter. (One recent Hybrid Rugosa, a cross of the species with a Polyantha rose, is always in bloom, and is rather well described as "a Rugosa rose with the flowers of a red carnation." It is known as F. J. Grootendorst.)

These Rugosa roses are completely hardy without protection, and are the most dependable sorts for cold locations. Their heavy thorns, thick

growth, great vigor, and self-supporting character make them hedge plants of great value. When in the course of time they become involved with old wood and have taken too much space, it is practicable to ruthlessly shear them at the ground, getting promptly a fine renewed growth.

Obviously these husky roses are not good company for the Hybrid Teas, nor indeed the Hybrid Perpetuals. Planted in a border by themselves, with room to range, they are superbly effective, not only in their foliage and their bloom, but also through their large and brilliantly red hips or seed-pods.

The Noisette roses need mention in this connection, though they are of present American importance only in the South and in Noisettes California, where they flourish with the Banksia roses, the latter giving in early summer an astonishing shower of white or yellow blooms, in both double and single forms, and with a perceptible violet fragrance. An early American rose-lover, John Champney, of Charleston, S. C., about 1810, did some hybridizing between the Musk rose—then in prominence as a garden form—and a blush China rose, the plants resulting from the seed of which came to be called Champney's Pink Cluster. Six or seven years later,

Philip Noisette, a florist also resident in Charleston, grew from this hybrid a rose which his brother in Paris, Louis Noisette, to whom he sent plants, cheekily distributed as Blush Noisette. The variety was a real advance, and as other varieties followed it, the class took and retained the name of Noisette. In 1830, the French hybridizer Maréchal raised Lamarque, a fragrant white climbing rose yet in commerce. In 1864, directly in line from Lamarque, came the notable and beautiful Maréchal Niel, originated then by Pradel and today of unexcelled loveliness and fragrance in the South, as well as in that paradoxical rose heaven, the Portland and Puget Sound region of the Pacific Northwest. Reve d'Or, Gold of Ophir, Solfaterre, William Allen Richardson, and other yellow varieties now providing much of the rose splendor of California are Noisettes also, and although the lack of hardiness north has prevented much consideration of this fine class in the Middle States, it is well represented today in France by pleasing varieties ranging from white to clear crimson and chrome-yellow. My earliest rose remembrance of well-nigh a half-century ago is of Lamarque and Maréchal Niel, both lovely in my father's greenhouses, and I cherish in my own little glass lean-to a plant of the latter obtained as a memorial of a

revered friend, the late and great P. J. Berckmans, before his famous Fruitland Nurseries at Augusta, Georgia, were given up.

The Moss roses probably need mention here, because they are delightful if well grown. They are very old; we find the varieties now in commerce—Blanche Moreau, Cris-tata, Salet, etc.—bearing dates of origin more than a half-century back. The rose is a form of the Provence or “Cabbage” rose, with a peculiar and very fragrant mossy growth of the calyx or sepals in which the buds are daintily dressed. This “moss” is caused by the multiplication of the glands, which themselves secrete and give off an agreeable balsamic odor.

Rosa centifolia muscosa is the botany of it. The plants are hardy, rather leggy, subject to mildew, and need good culture; the flowers that expand from the mossy buds are delightfully fragrant, and of the characteristic cupped form which caused some unpoetic old chump to call it a “cabbage” rose because “its petals are closely folded over each other like cabbages.” A plant or two of the Moss rose in a generous rose-garden, placed with the Hybrid Perpetuals—with which they bloom in early summer only—will delight with lovely buds, and will represent the Provence family.

The Hardy Climbing roses are of great importance in most of America. By their vigor and habit they provide many more square feet per plant of rose exposure than can be had in any other class, and all this exposure is a great bloom display in the early summer. Trained over the home doorway, hanging along the fences they beautify, swinging on trellises or arbors, sprawling over stone-piles or slopes, covering an old tree-stump, tied against posts or pillars, permitted to mass in a hedge or formed into a graceful shrub—anywhere or everywhere that a little sun and rain will let them live in any soil that will grow corn, they flourish, and do for the planter what no other roses can do.

Hardiness is, as has previously been explained, a relative term, but is here used as it applies to roses that will endure without protection most winters in the dotted central area of the Rose-Zone Map. (See page 183.) South of this area the horizontal-lined sections from South Carolina to parts of Texas and west through Arizona to the California coast fringe include the territory in which the climbing Hybrid Tea roses and the Noisettes and Banksias also are hardy.

For the region first above named, we have to consider two classes of Hardy Climbing roses.



PLATE III. The new Hybrid China rose, MRS. SARAH VAN FLEET ("W. C. 237").
Originated by the late Dr. W. Van Fleet. (See page 36.)
Reprinted by permission from the "American Rose Annual" for 1922.

They might well be separated into old and new forms, though it is more accurate to refer them to their parentage, the "old" climbers being of the Hybrid Setigera class, and the "new" comprising the hybrids of *Rosa multiflora* and *R. Wichuraiana*.

I find that on May 31, 1887, I wrote my name on the flyleaf of "The Rose," by H. B. Ellwanger, published five years earlier, and long the standard and best American book on the roses of the nineteenth century. Mr. Ellwanger dismisses all the climbers of his time as of little value save those in what he calls the Prairie class, derived from *Rosa setigera*, the wild Prairie rose indigenous "from Ontario and Wisconsin to Texas and Florida." About 1836, two Baltimore florists, Samuel and John Feast, sowed some seeds of the Prairie rose that had matured from flowers evidently fertilized by nearby blooms of "some of the best varieties of roses grown at the time," as Mr. Ellwanger puts it. "From this lot came Baltimore Belle and Queen of the Prairies, the two best-known sorts," continues the historian; and these two were the dominant climbers of my boyhood. The first, evidently owing its light color to Noisette blood, was not always hardy, but the Queen of the Prairies and several related sorts that followed were and are as hardy as the enduring native parent.

It is pathetic to note that an inquiry made in 1921 showed that among American nurserymen who sold through "tree agents" many were yet sending out the two old friends, Baltimore Belle and Queen of the Prairies, in disregard of the vastly superior varieties now extant.

The other class of climbers, the "new" sorts, began with the advent, about 1894, of the Crimson Rambler rose, which, well exploited and advertised, swept the country. In the light of its importance, its history is indeed interesting, as written by E. H. Wilson in his "Story of the Modern Rose."

In 1878, Prof. R. Smith sent from Japan to a Mr. Jenner in England a rose which the recipient named The Engineer in compliment to the profession of its donor. In course of time this rose came into possession of a nurseryman named Gilbert who exhibited some cut flowers of it under the above name in 1890, and received an Award of Merit from the Royal Horticultural Society. Soon afterwards Messrs. Charles Turner, of Slough, purchased the stock and changed the name to Crimson Rambler. . . . It has long been cultivated in China, and I consider that it is a sport from the common wild pink-flowered China Rambler (*R. multiflora cathayensis*).

The Crimson Rambler introduction in England was in 1893. It was in the rose-time of 1895 that I photographed a cluster of it held up by little Miss Dorothy Perkins on her grandfather's lawn

at Newark, New York. The more beautiful pink Wichuraiana hybrid of that little lady's name soon followed, and also swept the country.

The great success in England and in America of these Multiflora climbers stimulated hybridization, and other varieties of fine quality resulted as various good roses were worked upon the vigorous seed parent. It should be noted that as *Rosa multiflora* itself is sturdily able to stand up as a bush, as well as to serve as a so-called though not actual "climber," its progeny tend to be rather upright in habit. This tendency, of course much modified as distance from the wild parent increases, should be kept in mind in considering uses for these hybrids.

The Multiflora climbers include some splendid sorts, and of great variety in effect. The vigorous and yet dainty Dawson was produced in America before the introduction of Crimson Rambler, when Jackson Dawson of the Arnold Arboretum in 1888 crossed the well-known General Jacqueminot with *Rosa multiflora*. Its rose-pink delicacy has not been excelled. Baronesse van Ittersum, Goldfinch, the uniquely lovely Tausendschön, Leuchstern, and many others are of Multiflora parentage. Generally speaking, the Multiflora hybrids tend to the cluster-blooming and small-flowered type

of the parent, but these are by no means universal characters of roses assigned to this section, it probably being the fact that repeated crossings have so merged the various classes that even the botanist will need to do much guessing to assure parentage of some hybrids.

Of much greater importance, and furnishing latterly more varieties of distinction, are the Wichuraianas. Wichuraiana hybrids, so called because they rest on a very distinct Japanese native form sent in 1886 to Brussels, and named by the Belgian botanist Crépin as *Rosa Wichuraiana*, in compliment to Herr Max Ernst Wichura, a German botanist. This wilding (also called *R. Luciae*) is a true trailer, bearing numerous and lovely fragrant white single flowers, nearly 2 inches across, amid dark green and very glossy leaves that try to be evergreen where the frost is not severe. It is freely sold in America as the "Memorial rose," because of its assumed adaptability for covering graves.

The Wichuraiana hybrids, for the most part, do not retain the trailing tendency of the parent, but do hold some of the values of its lovely glossy leaves, and tend especially to large flowers, sometimes in clusters. They are of vigorous growth, easily trained, and usually flower late, thus ex-



PLATE IV. The Wichuraiana Hardy Climber, *EXCELSA*, as grown at Breeze Hill, the Author's home. (See page 33.)
Reprinted by permission from "My Growing Garden."

tending the season, though here again there is no definiteness, for one of the first of the Wichuraiana hybrids, the lovely large-flowered Climbing American Beauty, is among the earliest to open.

The line between the Multiflora and the Wichuraiana hybrids is too indistinct for a non-botanical rose-lover like me to see! Crimson Rambler is assuredly a Multiflora, yet Excelsa,* its far better American-raised counterpart, is said to be a Wichuraiana, as also are Dorothy Perkins and its twin sister, Lady Gay,† all three of which have strongly marked Multiflora characters.

The immense flowers of Alida Lovett;‡ the dainty separateness on long stems of the florists'-type rose, Dr. W. Van Fleet; the exquisite color and fragrance of Aviateur Bleriot; the Maréchal Niel suggestion we find in Emily Gray; the mass of large and lovely semi-double white flowers of Silver Moon; the bold single blooms of American Pillar, which brings in vigor and hardiness as well as noble beauty from its half parentage of *Rosa setigera*—all these endear us to the Wichuraiana hybrids. They are amenable to many uses, and commend themselves in all of them. More than hints of yellow and copper are entering, as well as deeper and brighter reds. There are varieties

*See facing Plate IV. †Plate XIV, facing page 148. ‡See Frontispiece.

bearing large and lovely single flowers that are most effective—such as Hiawatha, Evangeline, Paradise, La Fiamma, Milky Way, and others.

We are fortunate that American workers have been most successful with Wichuraiana climbers. The lamented Dr. W. Van Fleet, the hardly less regretted M. H. Walsh, and Jackson Dawson, have done wonders for us in this class. Captain Thomas' lovely dark red Dr. Huey is a prize as a pillar rose. (See its flowers on cover insert.)

The Climbing Hybrid Tea roses are those which have "sporting" in habit from their bush form to the making of long enough shoots to tie up or train. They show the same flowers as the varieties from which they sport, though usually in less quantity. They are no more hardy than the type, and in the central rose-growing region before referred to they will need to be laid down from their supports and covered for winter. In the South, where they are hardy, their lovely blooms commend them especially. They are best treated as pillar roses.

There are several Climbing Hybrid Perpetuals, so-called, which are vigorous forms of the type, and usable like the Climbing Hybrid Teas.

A most interesting American Climbing Hybrid Tea is Mrs. Geo. C. Thomas, the production of

Capt. Geo. C. Thomas, Jr., the loveliness of which may be noted from Plate XIII, facing page 137.

Hard to classify are some roses that are bush or climber, as they are handled, but which are obscure
Other Climbers as to parentage, or alone in their class. Such an one is Zephyrine Drouhin, by some catalogued as a Climbing Bourbon, but by those who know it classed as a neglected wonder, with its sweetly scented and lovely cerise-colored blooms on nearly thornless canes that will cover a doorway if encouraged.

A class yet unnamed when these words are written, but opening a vista of much enlarged rose usefulness, is the work of Dr. W. Van Fleet, the plant-hybridist whose death in January, 1922, was the greatest loss rose-growing in America has yet sustained. He was working for what he called "dooryard roses," to serve many uses in many locations, and to endure poor soil and neglect while yet showing the sovereignty of the Queen of Flowers. The first two varieties toward this prescription are Wichuraiana-China hybrids which are placed in commerce by a unique arrangement between the Federal Bureau of Plant Industry in the Department of Agriculture and the American Rose Society, incorporated "not for profit" in the state of Pennsylvania for that express pur-

pose. One is Mary Wallace, a lovely bright pink variety, shown growing in Plate II, facing page 20, and the other, a rich and bright light crimson sort ("W. C. 237"), is now named for the hybridizer's faithful co-worker and widow, Mrs. Sarah Van Fleet. (See Plate III, facing page 29.)

These roses have informal, semi-double flowers, produced in profusion on strong canes that may be permitted either to climb or to make bushes, in which case they will be as good-looking as any shrubs when out of bloom. They are believed to be hardy over a considerable area.

Then there are certain other hybrid climbers, as, for example, several Climbing Polyanthas. They are not as yet of great importance in America, though Climbing Orleans may be heartily commended as not only pleasing in June, but disposed to bloom again.

The originator of Frau Karl Druschki, Peter Lambert, of Trier, Germany, is sponsor for a so-called Lambertiana class, presumed to bloom in the autumn as well as at the conventional time, and of rather bushy climbing habit. As yet, these roses have not proved important in America.

CHAPTER III

THE UNUSUAL ROSES

ALL of the wildings or natives—or species, as they are botanically called—are unusual enough to the average American, whose acquaintance with those belonging on the continent is probably confined to not more than two or three. Because these permanent forms may be best discussed in connection with the natives from the other continents, there will first be taken up frankly certain old-fashioned and unusual roses.

When I came to live at what soon was properly called Breeze Hill, something more than a baker's dozen years ago, the vicinity of the old mansion house from which had been operated a large vineyard was seemingly bare of most shrubs, and entirely so of roses, as I thought. Great was my astonishment, therefore, when during the first June day my daughter came to me with the calm statement that she had been in the rose-garden! Actually I had not seen the group of old, decrepit, entangled plants which in an unsuspected corner her keener eyes found in full bloom.

These were the real old-fashioned roses. I found they had a clear history of at least twenty-five years before that day, and as these words are written they are all of forty years old. Despite their location in a shady corner, with only north and west partial exposure to the sun, save when that luminary is overhead, they have responded to the making over to which I subjected them, and are each year a pleasure to see. They are akin to some wonderful rose plants I visited one golden June day at the old Van Cortlandt Manor, on the east bank of the Hudson River, where history assured at least a hundred years as the age of the glowing garden in which they lived. How much older these Van Cortlandt roses are I do not know, but the old manor-house, which also served as a fort in the early days, with its great stone walls pierced here and there by apertures for rifles, bears over its lintel the date 1681.

Recently some further evidence as to old roses has appeared in the transcription of a catalogue of

The Crapo
Catalogue the Crapo Nursery, which did business
in New Bedford, Massachusetts in 1848.

It described fourteen varieties of Hybrid Bourbon roses, divided broadly into two classes—those that are “cupped” in flower and those that are globular. Not one of them is in commerce

today in any one of the world's rose catalogues I have been able to scan.

Of the "Provence or Cabbage roses," the Crapo catalogue says: "Of all the important species, this was the first introduced to this hemisphere, and although it has been superseded by hundreds of new varieties belonging to those classes that furnish a profusion of bloom for a much longer period, still the old Provence or Cabbage rose is a favorite flower." There are fourteen of these, also divided between cupped and globular forms, and ranging from "dark crimson, beautifully spotted" to "white, an old but good variety." Then there are eight Damask roses, "so called from its having been brought originally from Damascus."

We do get a contact with these days in the Moss roses, of which Mr. Crapo had ten varieties, including *Cristata*, *Luxembourg*, and *Princess Adelaide*, which may yet be had. There is also another contact in the *Noisette* roses, which in justice which has not been continued he ascribes to *Rosa Champneyana*, asserting that the class is "distinguished by its immensely large clusters of flowers, frequently forty to fifty flowers and buds in a single corymb. They are in bloom throughout the summer and autumn, but require a deep, rich soil. Most of the varieties are hardy, and others require

very slight protection." Among the thirteen sorts listed I find Chromatella, Felleberg, Lamarque, and Solfaterre yet extant, particularly in the South and in California.

In all this extended catalogue there are but two sorts that would fit into the present-day ever-blooming type. One is Mme. Desprez, described as "a very fine white Chinese everblooming or Bengal rose (*Rosa Indica*), somewhat tender, but will withstand our winters with a slight covering." The other is a "Tea-scented China Rose (*Rosa Indica odorata*)" called Antherosa, and said to be "large, pale yellow."

In "Miscellaneous Roses" are some names which arouse the collector's passion right promptly, for I would like to know what sort of a rose traveled under the name of "Belevem Episcopal," although I can better understand "Burning Coal," and "Dark Mottled," the latter being called "superb" because it is "purple mottled."

Mr. Crapo speaks glowingly of his Climbing roses, describing twenty-one varieties, of which probably only Baltimore Belle and Queen of the Prairies are yet in commerce. He says, "The Prairie or Michigan roses take the first rank," though "the flowers of the Ayrshire roses are small but peculiarly delicate and beautiful, and

some of them are quite fragrant." Curiously enough, the one Multiflora rose he offers, "Russelliana," said to have "vivid purplish crimson and white variegated, changeable, beautiful" flowers, is described as "rather tender." Another friend of my boyhood appears in the "Craimoisie Perpetual," which is doubtless Cramoisi Supérieur, a dark red China rose that I knew as Agrippina.

I have referred to this old New Bedford catalogue not only because of the genuine interest it has for any real rose-lover, but because of the light it throws on rose cultivation seventy-five years ago in the United States.

Further light on old roses, new enough in the long sense but old in the American sense, is found in a book previously referred to, Ellwanger's "The Rose," published in 1882, and giving carefully impartial descriptions of 956 varieties, of which but 18 were Hybrid Teas, with 171 Teas, and by far the larger number Hybrid Remontant roses, which we call Hybrid Perpetual. It will be indeed well for America when another book appears, as carefully and closely accurate as Ellwanger's book, describing nearly a thousand selected roses with complete frankness, and properly comparing and assembling the actual or virtual duplications which now occur at the expense of the rose-lover.

I know of no nursery in the United States which now grows any considerable number of these old-fashioned roses. Particularly do the Provence or Cabbage roses and the Damask roses deserve revival in the gardens of true rose-lovers. Some of them can be obtained abroad, being mentioned in the catalogue of Ketten Frères, Luxembourg, which provides descriptions of 1,232 roses.

Next among the unusual roses are the Sweetbriers, or, as I should put it, the Hybrid Sweetbriers. The true Sweetbrier, of which Sweetbriers the principal attraction is its exquisitely scented foliage, is *Rosa eglanteria* (formerly *R. rubiginosa*), the Eglantine of England, native in Europe and in some localities in the East. Normally its flowers are bright pink and single. An English rosarian, Lord Penzance, has developed hybrids which add size and variety of color to the class. He dipped right into Sir Walter Scott's novels for the names of his charming roses, after taking care of himself and his "Lady," so we have Rose Bradwardine, Flora McIvor, Lucy Ashton, Meg Merrilies, and others. They have no place in the backyard rose-garden, but a very fine and pleasant place where they can have room along the borders of the large garden, along driveways, in shrubberies, in parks, and to mark divisions in

formal rose-gardens. They are unusual, but they ought to be much more usual.

I have said at the opening of this chapter that the species roses are but little known in America. Botanists differ as to the number of our native forms. One includes them all in 29 species, but Rydberg's "Flora of North America" (1918) describes 129 species, 14 of which are introduced escapes, while 2 belong south of the United States and Mexico, thus leaving us 113 natives.

Many of us know *Rosa setigera*, the parent of the old-fashioned climbers, the Prairie rose which one yet finds along eastern roadsides.

Cherokee Many of us have seen and have enjoyed the Cherokee rose, which we are prone, though erroneously, to think is native in the South. It is *R. lævigata*, a handsome and very individual species originally from China and Formosa, but naturalized in the Southern States, where it is rampant and lovely. It not only serves its fine purpose as a roadside rose in the South, rambling over fences as well, but it has been hybridized with other roses to advantage. There is, for example, the hybrid with a China monthly rose, giving the Anemone variety, with large, single, light pink flowers, in contrast with the white blooms of the species. Much more importantly,

Dr. Van Fleet hybridized it with a cross between the fine old Tea rose *Devoniensis* and *R. Wichuraiana*, giving us the splendid climber Silver Moon, which, curiously, is hardier in the North than any of its parents. The Cherokee itself has, by the way, been carried over with slight protection in the latitude of Philadelphia.

As this is not a work on the botany of the rose, I do not feel that it is incumbent on me to follow all the North American species. I ought
American Species to mention the forms of *Rosa carolina*, sometimes called *R. humilis*, which is the "Pasture rose," and which is found all the way from Maine to Georgia, and west to Wisconsin and Oklahoma. It is a pleasing shrub between 3 and 5 feet in height, spreading rapidly by numerous suckers and showing attractive pink flowers.

Found in the northern part of America, from Newfoundland to Massachusetts, is *Rosa nitida*, the "Shining rose," a low shrub barely knee-high, with single, fairly large pink flowers, and with its common name denoting its glossy foliage.

Not hardy in the North is the handsome half-evergreen climbing Macartney rose (*Rosa bracteata*), which is, although a native of South China and Formosa, naturalized in Florida and Louisiana. It blooms long, and its white flowers are fine.

An attractive native is the white form of *Rosa virginiana*, often called *R. lucida alba*. It grows to a sightly shrub nearly the height of a man, and is handsome in summer, not only by reason of its shining foliage, but, in the case of the white variety, because of the large, snowy flowers with green stamens that distinguish it.

Sometimes we think of the rose as confined entirely to the North Temperate Zone, yet *Rosa acicularis* blooms in Alaska and disdains to come farther south than Ontario and Colorado. There are several forms of the species, varying materially in form of leaf and color and habit of flowers, which are sometimes as much as $2\frac{1}{2}$ inches across. Normally it is a dwarf shrub, and a recent writer in the "American Rose Annual" speaks of the joy it gives in our wonderful American territory, rich Alaska. Dr. Van Fleet has found the Engelmann form of this rose valuable in his hybridizing for American dooryard roses.

Another of these super-hardy roses is *Rosa nutkana*, also ranging south from Alaska, and sometimes making a growth to 5 feet. It has the largest flowers of the western species, sometimes exceeding 2 inches across. *R. Woodsii* starts in Saskatchewan, and finds the temperature too warm for it south of Colorado. *R. californica* is an

ambitious shrub ranging to 8 feet in height and producing its pink flowers in dense corymbs over so long a period (from June to August) that it ought to be useful to the hybridizers.

A dainty little ground-cover is the almost herbaceous *Rosa heliophila*, native of the prairie regions of the West to the Northwest, from Illinois and Missouri to the Dakotas and Manitoba. Its rosy crimson flowers are of fair size, and the plant maintains itself on dry slopes and in barren places. There is also a white-flowered form.

As I have written, this is not the place to completely follow through the American roses. It is the place to mention the outstanding species from all the world that are as yet unusual here, but ought to come to have friendly vogue among us, polyglot people as we are, and deserving all the roses of all the world that will grow here, because we have all the people of all the world that ought to live here—and some that we could perhaps spare!

Just why *Rosa spinosissima* is called the “Scotch rose” I do not know, because while it belongs in Europe it also belongs to northern Asia. The thing I do know about it is that it is very variable in form, and that all the forms I have seen are good because they

Old-World
Species

produce for us low shrubs 3 to 4 feet high, pleasingly rounded, and usually covered the season through with delightfully permanent bright green foliage, surmounted or almost hidden in May and June, quite early in the rose season, with a cloud of bright and beautiful white or tinted flowers. There are many varieties, as I have said, and they are all worth having, varying as they do from white to blush, and often to yellow and white. The Scotch roses are among the most desirable low shrubs available in America. While they spread freely by underground shoots, they never get out of hand above as so many of the species roses tend to do.

What my good friend W. C. Egan calls the "Northern Cherokee rose" is the *Altaica* form of *Rosa spinosissima*. It was for some time dignified into a separate species, called *R. altaica*. It is all that I have said of the typical *R. spinosissima*, and then more, because it is still more pleasingly rounded in outline and its flowers are yet larger. It is a most valuable shrub, with the same amenable habit as that just mentioned, and it is, I am glad to say, also in commerce. Dr. Van Fleet did wonders with it in hybridization, as may be learned from further comment on page 53.

About the most exciting species rose of recent

years in America is the Chinese *Rosa Hugonis*. It belongs naturally in northern central and western China, and inasmuch as these parts of China and eastern America have a curious geologic and floral kinship, I think it belongs here just as well. It is, at any rate, ruggedly hardy everywhere it has been tried in the United States, and is so utterly different from any of our own natives, and so completely pleasing, that it certainly deserves all the attention paid it. Now, after all these laudations, I may proceed to say that it is a very early-blooming yellow-flowered species, forming long, prickly, flexible red canes 5 to 6 feet in height, gracefully drooping so as to give the general appearance of the well-known *Spiræa Vanhouttei*. Its small, light green leaves are made up of five to eleven leaflets, and the young growth is usually bright wine-red. But it is the astonishing flowers that make the distinction of this rose, for they are clear yellow, single, more than 2 inches across, and so abundant that there seems to be one every inch on every branch—an impossibility which becomes possible when it is realized that the flowers tend to surround the twig, and not merely to bloom along one aspect of it. (See illustration in Plate VI.)

Hugonis is the earliest of roses to open its



PLATE V. *ROSA SETIPODA*, as blooming in the Author's garden. "In June a sheer cloud of pale pink flowers about 2 inches across." (See page 50.)

flowers, and sometimes gladdens the first days of May at Breeze Hill. In an ordinary season it will be a distinct and lovely thing for at least two weeks, as its flowers come and go. They fade lighter, but are always yellow, and they stand successfully our ardent sun. Because of the ample and pleasing though dainty foliage, the plant stays good-looking all through the season, and in an ordinary fall it takes on an added beauty in the purplish tone which its foliage assumes before Jack Frost retires it as finished.

Rosa Hugonis grows rapidly, blooms on young plants, spreads reasonably, will behave itself on the edge of the shrubbery, will likewise make a superb specimen in the open, and is altogether a rose which soon should become usual rather than unusual. Its remarkable Van Fleet hybrids are mentioned on page 54.

Closely akin, so far as floral effect is concerned, are *Rosa Ecæ* and *R. xanthina*. Both are yellow, both have small leaflets, red twigs, numerous small thorns and more numerous large flowers. Neither is as easy to have or as easy to continue to have as is *R. Hugonis*. Both are desirable to the real student of roses who may suspect their identity. Of *R. xanthina* there is a double form.

Distinctly unusual in America is *Rosa setipoda*,

another reasonably hardy, rampantly vigorous Chinese contribution to our rose happiness. It threatens, at Breeze Hill, to grow to 10 feet in height, but its branches, which are red and graceful, droop pleasantly. It is in June a sheer cloud of pale pink flowers about 2 inches across, in loose corymbs, and when in full bloom is the most beautiful wild rose I know, even exceeding in effective elegance *R. Hugonis*. The flowers are followed by bright red hips which hang on until frost shrivels them, and where they drop they are likely to start business quite promptly, for the rose is easy in its seeding, quite apart from many other species. (See Plate V, facing page 49.)

There are some fascinating possibilities among the unusual Chinese species, such as *Rosa sertata*, *R. Helenæ*, *R. omeiensis*, *R. multibracteata*, and others. This is not the place, however, to discuss mere possibilities.

In the last preceding chapter the importance of *Rosa multiflora* was noted, particularly as the seed parent of numerous valuable and attractive climbing roses. Mention was barely made of one form of it, *R. multiflora cathayensis*, which, according to E. H. Wilson, is the form or parent from which sported the well-known Crimson Rambler. Having long ago lost my

devotion to the latter, first because it was so overplanted as to become monotonous, and second because of its bad behavior in inviting mildew all the time, I was dubious as to the value given to the Cathayensis form by Mr. Wilson. All my dubiety has disappeared, because for some years I have each June been entranced with the exquisite beauty of a great plant of this variety which dominates a right angle in the west garden at Breeze Hill. It may botanically show similarity to Crimson Rambler, but to the eye it is very different in every respect. Its growth, which is rampantly vigorous, is yet slender, and without any appearance of grossness. Shoots 10 to 15 feet long appear, but are easily twined in on the main plant—a thing about impossible to do with the typical form of *R. multiflora*. Treating it in this fashion, we get a round-topped bush which in the June days aforesaid is crowded and crowned with a profusion of fairly large light pink flowers in flat corymbs, and with a peculiar lively change of tint at the ends of the petals, which in connection with the yellow stamens gives the flowers the airiness and grace of butterflies. This Cathayensis Multiflora is another unusual rose that ought to be usual. (See Plate XV, facing page 157.)

Dr. Van Fleet's sadly interrupted work at Bell

Station, Maryland, where he was breeding roses with facility, intelligence, and devotion, Van Fleet
Hybrids had already provided some fine results. Two of these were mentioned in the latter part of the preceding chapter. Others which are likely to be available shortly may properly be presented here.

A hybrid between *Rosa Moyesii*, the deep red Chinese native form, and a friendly seed parent, the Japanese Wichuraiana, has given us "W. M. 5," the only name it bears at this writing. The plant carrying that name is a vigorous bush 5 feet high, and more, which might climb if I did not intertwine its flexible shoots, clothed the season through as they are with substantial bright green foliage that laughs at insects. When the June rose glory breaks upon us, W. M. 5 opens up a complete covering of single flowers over 2 inches in diameter, brilliant dark scarlet-crimson on the outer part to a dainty twilight zone which merges into clear white in the center of the flower, where arise a group of bright yellow stamens. The freedom of bloom, the brilliance of color, the beautiful brightness of the foliage and the vigor of the plant ought to make W. M. 5 not only a good pillar rose but a mighty fine thing in the shrubbery. (Plate VI shows both W. M. 5, and its Moyesi parent.)

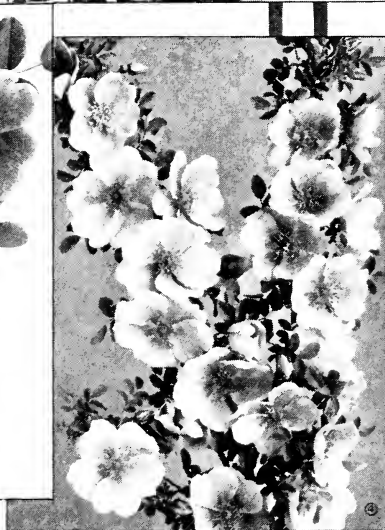
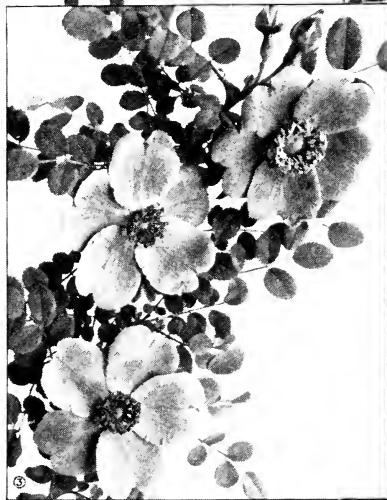


PLATE VI. Some Unusual Roses. (See pages 52 and 53.)

1. "W. S. 18," the Van Fleet Hybrid of *Rosa Soulieana* \times *R. Wichuraiana*.
2. "W. M. 5," the Van Fleet Hybrid of *Rosa Moyesii* \times *R. Wichuraiana*.
3. *Rosa Moyesii*, the deep red Chinese native.
4. *Rosa Hugonis*, the clear yellow Chinese rose; desirable in the shrubbery.

Rosa Soulieana is a Chinese form, growing into an upright spreading shrub. Dr. Van Fleet combined it with his pet seed parent, *R. Wichuraiana*, and the result I am admiring is "W. S. 18," which seemed to give more pleasure to the good Doctor when it was in bloom at Bell than any other of his hybrids, because of the cloud of white flowers that completely covered it. These flowers are single, about 2 inches across, with dainty green and pale yellow stamens held differently from other roses, and are in immense clusters. A peculiarity of the plant is its glaucous blue-green foliage, distinct from any other rose foliage. Apparently this good hybrid is not completely hardy, for it loses its tips in a bad winter, though inasmuch as the growth is extremely vigorous, there is plenty left for a gorgeous June display. I should expect it to be entirely hardy from Philadelphia south, and I know of no other rose, save Walsh's Milky Way, which in any sense compares with its exquisite whiteness when in bloom. It is adapted to be a shrubby object or to be trained to the pillar form. (See illustration in Plate VI.)

Fascinated with the form of *Rosa spinosissima* and *R. altaica* as I have been, it was a delight to find that Dr. Van Fleet had succeeded in causing these good things to "nick" with *R. Hugonis*,

and as well that he had hitched Hugonis with one of our pet American-bred Hybrid Tea roses, John Cook's wonderful and winning Radiance. The result of these combinations has been to give some roses of the general aspect of the Spinosissima class, vigorous, rounded, spreading, but into which *R. Hugonis* has in every case injected its peculiar characteristics of color of twig and style of thorn, and has also, even more to the good, mingled its exquisite coloration. The hybrids that have bloomed at Breeze Hill are not yet even numbered, but there are single and semi-double flowers of pale primrose, very large and lovely, and there is one dainty prize in which the late sunset hue that came from Hugonis meets the sunrise tints of Radiance in a semi-double cupped flower only to be compared with Jackson Dawson's wonderful Sargent rose.

This Sargent rose is yet unusual, but it ought not to be. Jackson Dawson made it, or rather the Creator made it under the loving hands of Jackson Dawson, who brought together, in 1912, the combination of *Rosa Wichuraiana*, Crimson Rambler and Baroness Rothschild resulting in this rose. I can best describe it by asking the reader when apple trees next bloom to find the most beautiful pink-and-white cupped blossom within

reach, and to look at it with a magnifying glass so that it is doubled in size and its pinkness intensified. He will then have before his mind a picture of the exquisite Sargent, which, it should be observed from its parentage, combines both the Oriental native forms that have given us our best climbing roses with the European and Asian blend that made up the Hybrid Perpetuals. (See Plate VII, facing page 61.)

This survey of the unusual roses would be incomplete if I did not bring up for passing mention the *Rugosa* hybrids mentioned Austrian Briers in the last chapter, which are by no means yet as usual as they ought to be, and more particularly call attention to the Austrian Brier type, characterized in America by Persian Yellow and Harison's Yellow as well as by the infrequently found Austrian Copper. These three sorts relate to *Rosa fætida*. The strain is most important because it is through it that yellow and copper hues have gotten, by way of the Pernetianas, into our Hybrid Tea roses, providing the sunset hues of Los Angeles, Willowmere, and similar roses.

Persian Yellow and Harison's Yellow may easily be had, but they are not so easily kept blooming, because the less thoughtful rose-lover is likely to prune them as he prunes his Hybrid

Perpetuals, and they simply will not stand pruning, save to cut out dead wood. They are lank and ugly, and gradually become more and more unkempt, but nothing that I know of gives just the same rose pleasure that they do when, in early rose-time, their dainty, double, definitely yellow flowers open amid scented foliage. They should be so planted that they can be faced with dwarfer growing roses.

The rather rarely produced flowers of the Austrian Copper are literally exciting to see, for nothing else has the same coppery color.

In America we have used but sparingly the Ayrshire roses, botanically referred to *Rosa arvensis capreolata*, which include certain summer-blooming rapid-growing slender and very hardy English climbers. They produce small flowers singly, but not single. With our wealth of fine hardy climbers, they are of little importance.

Sensible as I am that this setting forth of the less usual roses is anything but complete, I hope it will start some rose friends to making the investigations for themselves which ought to give them the great satisfaction I have felt in my rose adventures out of the beaten paths.

the less thoughtful rose-lover
 as he prunes his Hybrid

CHAPTER IV

THE ROSE PLANT ITSELF

WHAT is a rose? To the average non-botanical person, the answer is that a rose is just a rose. It is not a tree, or a herbaceous plant; it is simply a rose. But there is, nevertheless, a necessary and desirable definition. The *Encyclopedia Britannica* thus reads: "Roses are erect or climbing shrubs, never herbs or trees, generally more or less copiously provided with straight or hooked prickles of various shapes, and with glandular hairs."

The top-notch American authority, Bailey's *Standard Cyclopedia of Horticulture*, defines the genus *Rosa* as "Ornamental shrubs chiefly grown for handsome flowers, also for ornamental fruits and attractive foliage." The article on "Rose" begins thus: "The queen of flowers; woody plants, some of them distinctly shrubby, many forms much developed horticulturally, all grown for the beautiful and most fragrant flowers in white, yellow, and shades of red."

For our purpose, the rose is a woody shrub. It

has roots that forage for food in the soil and a top with stems, twigs, usually thorns (alas!), leaves and flowers, all working to elaborate into beauty what the roots send up, and to transpire into food for the plant and for the seeds that insure its perpetuation, the air, the sunshine, and the rain which are part of God's provision.

In the view of this book, intended to be useful to amateur rose-lovers, the knowledge requisite to success relates to the two main divisions, so to speak, of the rose plant—the root underground and the top above ground. We will usually have more and better flowers if the top is relatively large and strong. To have this desirable top, the part underground, the root system, must be able to make and maintain the top. Further, assuming that a rose plant gains strength with age, it must be able, both above ground and below, to endure the winter to which it may be exposed—that is, it must be hardy to frost, where there is frost.

Put into moist soil seeds (they are technically “achenes,” not seeds) of a Multiflora or some other “wild” rose. In course of time they will germinate and become little plants, showing tops above ground and having roots under ground. When they flower, the blooms will be substantially the same as those of the parent plant—provided

it grew alone, and its flowers had not been "fertilized" with pollen from the flowers of another and different plant. These will be "own-root" plants of wild roses.

After a rose you like has dropped its petals, cut from the plant the stem or twig on which it grew, and make a "cutting" or "slip," several inches long, and including at least one "eye" or "bud," as noted at the base of a leaf. In some sheltered but well-lighted place, plant this cutting in clean sand, with one eye just out of the sand. Keep the sand continuously moist and at an even temperature of approximately 65° Fahrenheit, and prevent wind and direct sunlight from reaching the cutting. After a time the bud above the sand may emit leaves, and the other end of the cutting may emit roots. If this rooted cutting be then carefully planted in a pot or a sheltered spot, and shaded from sun and air for a few days, it will gradually become an established plant, and the flowers that eventually appear will be like the one which surmounted the cutting when it was made. This will also be an "own-root" plant—the own-root rose of American commerce.

It was long since observed that the plants raised from seeds of the wild roses, and particularly of certain species—the Japanese Multiflora, for ex-

ample—grew much more rapidly and vigorously than those resulting from the cuttings of a cherished and admired variety, even such vigorous sorts as *Ophelia* or *Radiance*. Likewise, it appeared that cuttings from some wild roses, particularly of the *Manetti* form of the *China* or *Bengal* rose and of the *Dog* or *Brier* rose, would root readily and soon make strong plants.

Now when an eye or bud from a desired rose variety is properly inserted under the bark on the stem of such a seedling or cutting plant as above mentioned, union may so occur that in the course of about a year, and after cutting away the wild top, the completed plant will comprise the more vigorous wild root-system under ground, pumping plant-food and moisture up into a stem above ground of the desired variety. Or, a “scion” or small cutting of the desired variety may have been united by grafting with the wild root, with the same eventual result. In either case, the ensuing plant is a “budded” or “grafted” rose. All of it underground is yet the wilding, technically called the “stock.” All of the plant that has grown from the bud or scion above ground is of the variety chosen. Thus a great double *Paul Neyron* blooms for us on a root which itself can produce only small single flowers, for all its vigor.



PLATE VII. The SARGENT rose. (*Rosa Wichuraiana* × *Crimson Rambler* × *Baroness Rothschild*.) "The most beautiful pink-and-white cupped blossom." (See page 55.)

Some classes of roses naturally tend to such root vigor that the more expensive form of propagation by budding or grafting is in no sense desirable. The Hardy Climbing roses of all classes, save the Climbing Teas and Hybrid Teas, the Rugosas and their hybrids, the Sweetbriers and the native or "wild" roses, are usually grown from direct cuttings, and are then on their own roots. The primary purpose of using a more vigorous "stock" or root-system is to secure greater strength and blooming ability in the top, though at times budding is used to obtain the more rapid multiplication of a desired variety.

Broadly looked at, two classes of rose plants are obtainable in American commerce.

The "own-root" plants of the type known as the "Springfield" roses, are customarily rooted and potted in summer or fall, carried over winter in cool greenhouses or coldframes, and sold from small pots the following season, when they are toward a year old. Some growers keep up a rather continuous production the year round, and some propagate from plants that are seldom given natural rest. Usually, these small roses are priced at one-third to one-half the charge for the older, much larger, outdoor-grown budded or own-root plants. All the

Own-root Plants

Tea, Hybrid Tea, Polyantha, Hybrid Perpetual, and other ordinary varieties, including the Climbers, are obtainable in these much smaller "one-year" own-root plants, and sometimes also in larger plants grown in pots for another year. They are customarily shipped in full growth, and their size permits them to be safely mailed to distant points. This facility and cheapness has undoubtedly made roses available to many persons in places hard to reach with the larger plants.

The other class includes (1) the Hardy Climbers, Rugosas, species, and previously mentioned sorts grown from cuttings, rooted usually in coldframes over winter (and sometimes own-root everblooming sorts grown from undebilitated stock plants), "lined out" in the field and cultivated one entire following season, being that fall and the ensuing spring available for purchase and planting as "two-year" open-ground plants; and (2) the Teas, Hybrid Teas, Hybrid Perpetuals, Polyanthas, etc., budded one summer or grafted one winter on "stocks" or seedlings that have had one full year in the open, thereafter having had another full year of growth in the open, and being available for purchase or planting in fall or the following spring as "two-year" field-grown plants.

It is obvious that the "Springfield" type of own-

root rose plants ought to be, as they are, less costly than the field-grown budded or own-root plants, and that they are younger and smaller. It is likewise apparent that as they are kept in pots they may be distributed over a much longer season than the field-grown plants. In fact, it is the boast of certain large producers of these plants that they are "growing plants five times as fast as the nurseryman," which may be "shipped and planted at any time of the year."

The field-grown budded plants are much larger and older, can be safely handled only during their dormant or leafless period—save
Budded Plants when potted, concerning which practice there is mention later—and cost more. They can be safely shipped to distant points, but of course at a greater cost. (Field-grown grafted plants are much the same.)*

Which class, then, is recommended to the inquiring amateur?

Many years of increasingly widespread correspondence as editor of the "American Rose An-

*Mention may be made of certain rose plants at times literally "thrown on the market" often through department stores, as they are discarded from the greenhouses in which they have been "forced" for several years. Such plants, if they have been rested by withholding water, and severely pruned, may give satisfaction. Frequently they are of sorts unsuited to the garden, and are sold without previous preparation for the garden, in which condition they are not worth anything.

nual" has acquainted me with the importance of this question. Is it possible to make a helpful answer without "side-stepping"? I believe it is.

Let us consider what happens when one plants a rose with any care, any time in the spring that is half fair to the demands of the plant's growing season. The rose plant responds quickly; an April- or May-set plant may give flowers in June, and before the end of the summer it may have provided a dozen or more lovely blooms. Even the little own-root plants are likely to bloom about in proportion the first year to their smaller size and lower cost.

So my first reply is that any well-cared-for rose plant of the everblooming type is likely to pay its own way in lovely blooms during its first season. If it lives over winter, and does more another year, it is paying rose dividends.

As to which to plant, the smaller "Springfield" own-root, or the dormant field-grown budded or
 Which to Plant own-root: With this one-season compensation in mind, I maintain that it is a question of place and of pocketbook. Of place considerably, especially in the latitude of Washington and south where own-root plants have given satisfaction, though seldom yielding as many blooms to the plant, whatever the age, as the same



PLATE VIII. MADAME PLANTIER. An old Hybrid China or Hybrid Noisette rose, originated in 1835, and yet useful for hedges and masses by reason of its double white flowers and its vigor and hardiness. (See page 68.)

sort budded on the stock best for that locality. Of price certainly, because one obtains two or three of the smaller own-root plants for the cost of one outdoor-grown rose. Also, these smaller plants may be set closer, and thus more individual plants be grown in a limited space.

The dormant field-grown own-root plant has its obvious advantages, particularly in some Hybrid Tea varieties, but when there is, especially north of Washington, a careful comparison between the same varieties on own roots or budded, the latter usually wins, particularly if the proper stock has been used.

A detailed test made near Philadelphia of ten standard varieties of Hybrid Teas gave an average for the season of ten flowers per plant for the own-root plants and twenty-seven flowers per plant for the same sorts budded on Multiflora roots, and of nineteen flowers per plant on Manetti and Brier. There can be no question which will give best results in bloom in that vicinity.

The own-root plants to which I am referring are those grown cool enough and slow enough to endure the shipping and the change to outdoors without serious check or the development of mildew, or those grown a season in the open and shipped dormant, just like budded stock.

The mean little rooted cuttings that have been grown from forced plants in high temperature are unfit to plant out, and are dear, for that use, at any price. In like fashion, the budded plants I am discussing are those that have been skilfully "worked," have had clean culture, have been carefully dug, handled and packed so that they get to the purchaser with all their roots alive. (A short exposure to the sun and wind will destroy uncovered rose roots, and careless digging can also destroy most of a good root system.)

It is here in point to deprecate the practice of crowding the roots of strong outdoor-grown plants into pots, and of shipping them in Potted Roses growth as they are later taken from these pots. It has been observed that those constricted, pot-confined, curled-up root-systems seldom send out side-roots, and thus do not extend their feeding range, and that they are quite likely to be shorter-lived than those the roots of which have had always free range to extend themselves. They may be useful for very late planting, and to serve emergencies, but it is far better to obtain dormant plants early in the season, and to set them out with roots extended about as they were in the field.

If budded plants are to be used, the species or

variety, the "stock" on which they are budded becomes important. Here again controversy rages, and some uncertainty exists, for there has been no real research of extended character conducted as yet to determine the question, which is one of great importance. The "American Rose Annual" in its issues of 1916, 1918, and 1921, has published carefully detailed and impartial discussions on the subject, and the Bureau of Plant Industry in the Federal Department of Agriculture is conducting experiments with various stocks at Washington.

The stocks in general use for budding in America are as follows:

MANETTI (*Rosa chinensis Manetti*) has long been imported from Europe in quantity, and is also grown extensively in California, from cuttings.

MULTIFLORA OR JAPANESE MULTIFLORA (*R. multiflora*, Japanese form, possibly *Thunbergiana*) is largely used in the eastern part of America, grown both from seed—the preferable way—and from cuttings.

DOG ROSE, or BRIER (*R. canina*), extensively used in Europe, is but sparingly available in the United States. Brier stocks are grown from seed or from cuttings.

RUGOSA (*R. rugosa*) is the standard stock for tree roses, and is sparingly used for other classes. It is imported from Holland, as well as grown in America.

RAGGED ROBIN, the old Bourbon rose, Gloire des Rosomanes (originated in France by Vibert in 1825, and used as

one of the parents of General Jacqueminot by Roussel in 1853), is availed of considerably in California.

MME. PLANTIER, an old and vigorous white rose, variously called a Hybrid China and a Hybrid Noisette, probably the former, is used in Florida and is hardy North. (It is, indeed, an effective shrub, as may be noted by referring to Plate VIII, facing page 64.)

CHEROKEE (*R. laxigata*) is found to be exceedingly useful in the South; it is not hardy north of Georgia.

In addition, many other strong-growing roses—the Silver Moon climber, for instance—have been experimentally tried out as stocks upon which to bud, and there are several Chinese natives under trial by the Bureau of Plant Industry of the Department of Agriculture. Those above mentioned are the stocks in general commercial use.

No man in America has given more attention to the study of the bloom-habits of the rose, or to

the testing of many new varieties,
 Captain Thomas' "Average Facts" than Capt. George C. Thomas, Jr.*

First, in his great garden near Philadelphia, and later, in what he believes to be a particularly favorable location near Los Angeles, he has impartially tried out many varieties, both on their own roots and on various stocks. From his careful article in the 1922 "American Rose Annual" are here presented his statement of

*See cover insert and Plate XIII for roses originated by Captain Thomas.

“average facts,” and certain pertinent conclusions which may be of use to the inquiring amateur:

Own-root Facts.—A great many roses may be successfully propagated as own-root plants. Some roses do as well so grown as by any other method; a few are claimed to do better. Some roses will fail when grown on their own roots.

Budded Facts.—A great many roses may be successfully propagated by budding. Some roses will do better so grown than by any other method, and certain stocks are superior for certain varieties. No rose will fail when budded.

Practically all types of hardy ramblers, species, and subspecies do splendidly on their own roots.

From Captain Thomas' conclusions are presented the following:

The safest and best stocks for Hybrid Perpetual, Hybrid Tea, and Tea roses are as follows:

For the Middle Atlantic States, and in climates with like extremes: Budded Hybrid Perpetual, selected budded Hybrid Tea and Tea.

North of Boston and in climates with like extremes of cold: Selected budded Hybrid Perpetual and Hybrid Tea.

Around Washington and climates with like extremes: Selected budded Hybrid Perpetual, budded Hybrid Tea and Tea, all as first choice; selected own-root Hybrid Perpetual, Hybrid Tea, all as second choice.

In the Southern States, except where there are no extremes of heat or dryness: Selected budded Hybrid Perpetual, Hybrid Tea, and Tea.

In the Pacific Northwest: Budded Hybrid Perpetual and Hybrid Tea, selected budded Tea, all as first choice; selected own-root Hybrid Perpetual and Hybrid Tea, as second choice.

In Southern California Coast Region: Budded Hybrid

Perpetual and Hybrid Tea, as first choice over own-root Hybrid Perpetual and Hybrid Tea. In Teas, budded roses are preferable for the weak growers; but the strongest Teas do as well on their own roots as when on a stock.

In climates where the temperature goes well below zero for continued periods, use only the very strongest of the budded Hybrid Perpetual sorts.

Experiences of the same capable rosarian with various stocks are also here made available:

BRIER is good for Hybrid Tea and Tea roses, and is, possibly, hardier against extreme cold than the Multiflora.

MANETTI is best for Hybrid Perpetual sorts.

RUGOSA is second choice for Hybrid Perpetuals in the North.

MULTIFLORA is best for weak-growing Hybrid Tea and Tea roses in Middle Atlantic States; is possibly not as hardy against cold in the North as Brier, and gives only fair results in California's southern coast; as properly budded in the collar of seedlings, suckers least of any stock.

RAGGED ROBIN has done well in California, but suckers badly; not as hardy against cold as Brier or Multiflora.

The last paragraph prompts an inquiry as to what is a "sucker" on a rose. The answer is that any budded rose is, as previously emphasized, in two sections: (first), the more vigorous "wild" root-system, intended to promote the better growth and bloom of (second), the top which has resulted from budding on the stock a desired variety. This vigorous root may not find sufficient outlet for its growing power

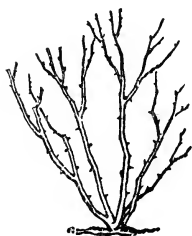
What Are
Suckers?

in the weaker top, and it may in consequence send up shoots from below the bud—and from the ground if the budded rose has been deeply planted. Such shoots are called “suckers,” and if they are permitted to grow, they will divert strength from the budded top, which may languish or die, the whole plant then going “wild.”

Carefully prepared stocks, particularly of seedling Multiflora, seldom send up suckers if the “crown” (the place between the root-system and the top-system) is set well below the surface of the ground, as budded roses should always be planted.

But if a sucker does appear, it is easily removed. Indeed, the presence of suckers among budded roses is positive proof that the responsible person has missed his—or her—occupation, for no real rose-lover could fail to see the not insidious appearance and growth of a shoot with differing leaf and stem color, usually differing number and shape of leaflets, such shoot arising from below the surface of the ground. That most gracious of all writers on the rose, the late Dean Hole, begins “A Book about Roses” thus: “He who would have beautiful roses in his garden must have beautiful roses in his heart. To win he must woo, as Jacob wooed Laban’s daughter, though drought

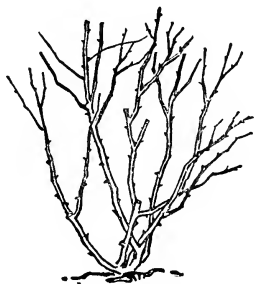
and frost consume. He must have . . . the watchfulness of love." The unfortunate who expects roses to grow and to bloom for him without constant care, without the daily oversight that gives him more joy than it takes work, is sure to be disappointed. He had better buy tin roses, or do his devoirs before a milliner's window!



A Tea Rose



A Polyantha Rose



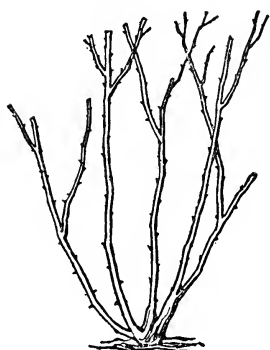
A Hybrid Tea Rose

Elsewhere (see Chapter VII) this book tells the tale of the loving care required to grow and nurture roses to advantage and success. In this chapter we are concerned only with the plant itself. We have seen that there may be differences in the underground pump—the root-system—that pushes the leaves and the blooms to our pleasure. This overground top varies less, and it is desirable that we know of its comparative habits and demands.

The Teas, Hybrid Teas, and Polyanthas—all in

Comparisons
of Plants

the so-called everblooming class—are normally plants that when at reasonable maturity of growth in eastern America reach between 18 and 30 inches in height, occasional varieties or individuals standing taller than a yardstick. An average



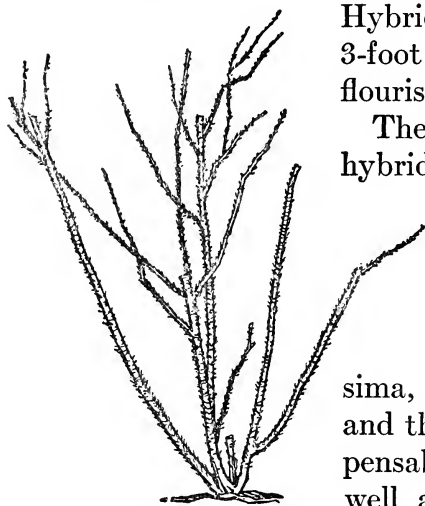
A Hybrid Perpetual Rose

diameter of 18 inches will enclose these little bushes, again with exceptions. All these plants, too, have rather easily renewable tops—I never had such flowers or so many of them as the season after a winter so bitter that it sheared off at the ground even Gruss an Teplitz. In planning for them, and in prospering them by care,

constant renewal from the ground must be kept in mind.

The Hybrid Perpetuals rise higher and spread more broadly, though their spread is rather leggy and ungainly. They may stand 3 to 4 or more feet high toward summer's end, and as I write these words on a January day, I have just finished tying over on each other the long canes of a J. B. Clark, which I thus propose shall give me next season many more blooms on the balloon-shaped bush that has resulted. I have seen Frau Karl

Druschki stand 8 feet high in an Auburn garden, but that was certainly exceptional, as also was the beauty of its white crown of blooms. So these



A Hybrid Rugosa Rose

Hybrid Perpetuals need a 3-foot diameter in which to flourish.

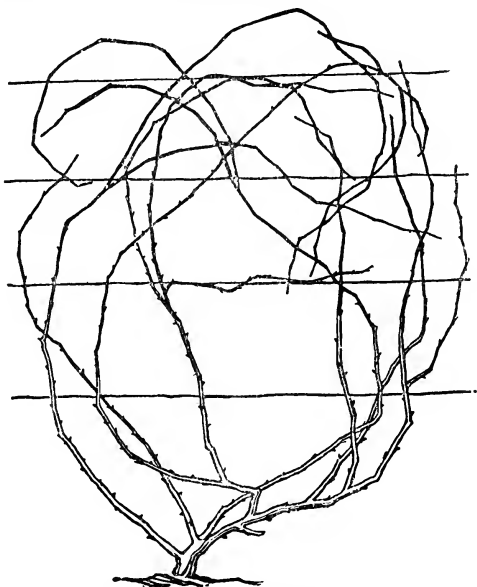
The Rugosas and their hybrids are yet taller and stronger in growth, and will be crowded at 4 feet apart. Most of the species group—Hugonis, Spinosissima, Altaica, and the like—and the awkward but indispensable Austrian Briers, as well as the Lord Penzance Briers, need even more space

on the ground, and all but the first three will aspire to heaven above a man's height in a few years.

The Climbers fall into three groups as to the habit and vigor of the plant. The Climbing Hybrid Teas, and some of the finest Multiflora and Wichuraiana hybrids, seldom reach comfortably higher than 6 feet, and these do well as pillars, or on a low trellis. Grown as pillars, a beautiful and facile form not at all yet well developed in

American gardens, they will stay within about 2 feet of diameter, and may be planted 4 to 5 feet apart, though 6 to 8 feet is better.

The husky Climbers, like Evangeline, Dr. W. Van Fleet, American Pillar, and Silver Moon, will reach out shoots 8 to 20 feet long in a season, and they need room for their vigor: On a trellis, at least 8 feet apart; as scrambling shrubs, as much or more space; along a hedge, trained thin or defensively thick, the same distance apart.



A Wichuraiana Hardy Climber

The standard or so-called “tree” roses are not at all well known in America. They result from budding into the top of a heavy single cane or stem of some strong-growing rose—usually *Rugosa*—any desired variety. This stem is mostly from 40 to 50 inches high, and the budded top will have

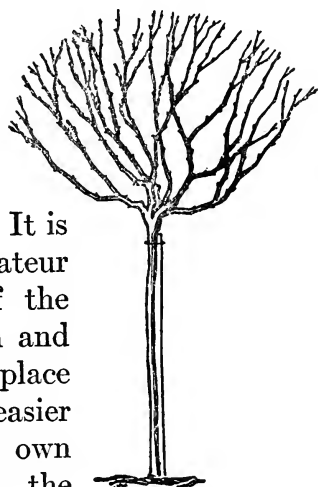
a diameter of 18 inches or more the second year, increasing as time goes on—if the “tree” lives!

These standards have heretofore been generally imported from Holland, or “worked” on the *Rugosa* roots and stems prepared and shipped from that same land of horticultural productivity. The class is here mentioned to complete the survey of the various forms in which roses for outdoors are commercially found in America.

Thus it will be noted that the rose plant itself is of great range. It is to guide the amateur

A Rambler trained
as a pillar

toward his own knowledge of the almost infinite variety in form and habit, in height and growth, in place and purpose, and to make it easier for him to develop toward his own ideals, that these items upon the plant itself have been written.



A Standard or
Tree Rose

CHAPTER V

USING ROSES TO BEST ADVANTAGE

THE Queen of Flowers needs to dominate, to hold court, to be "No. 1," wherever she blooms, whether it be in her roadside incarnation as the native wild rose, in well-served importance within the glass-roofed acres of the commercial cut-flower establishment, in queenly place controlling the costly formal rose-garden, or in cherished beauty as the one best thing in an humble back-yard garden. She must always reign; she is always regal!

This inherent quality of dominance compels attention to the placing of the rose in its human relations. We must primarily choose places for the roses rather than roses for the places. Lack of attention to this imperative fact is at the basis of much avoidable dissatisfaction.

Why are our Teas and Hybrid Teas, our Polyanthas and our Hybrid Perpetuals, in beds of their own, and not in the easily maintained and beautifully effective borders now so much preferred? It is because both in effect and for their

prosperity they must be separately set off. They demand the protected open, with full sixty per cent of sunlight and a hundred per cent of air circulation—but not unchecked exposure to wild gales.

Per contra, why is it quite difficult to secure pleasing effects with the modern hardy climbing roses in proximity to their sisters I have mentioned? Is it not because each will have the conditions it needs, the surroundings it requires, if it is to be happy and to make us happy?

Perhaps I am fanciful, but I have also the feeling that the Queen of Flowers demands of those who pay court to her a certain definite gentility. She has no place for the superficial or artificial, and while the parvenu, the “new-rich,” may purchase roses, and through hired help get roses to grow, he never gets inside the magic circle, never feels the ineffable sweetness of the favor of the rose, unless and until he loves and serves just the same as his gardener or his better-placed friend, or as the humblest or the highest who finds rose devotion to bring rose reward. Rose relations cannot be merely bought—they must be lived!

So the rose will be served in humble and democratic gentility, and she shows her favor only to those who truly love her, conferring as a guerdon for devotion a singular peace and pleasantness of

demeanor. The greatest of American municipal rose-gardens, that at Hartford, entertains its tens of thousands of visitors with a minimum of policing, and no disorder. Rose folk are true gentlefolk!

But now to our subject; let us consider rose adaptabilities and how we may best meet them.

For this purpose we may temporarily regroup the various classes of roses. In one we include the everblooming types—the Hybrid Teas and the Teas, the Polyanthas and the Noisettes—with the Hybrid Perpetuals. In another we place the Hardy Climbers. The native or “wild” roses of all the world, their hybrids in which the same habit persists, and some few of the more sophisticated sorts, we consider broadly as shrubby roses. Those that serve as peculiarly fine “ground-covers,” or to hold slopes, or otherwise to trail or “creep,” are yet another class. The “tree” or standard roses, and the “pillars” possible to make out of certain climbers, we treat as punctuation material, to be used to develop rose pictures.

For, after all, every rose or other plant placed to relate to humanity should be part of a picture. Nature—or Nature’s God as I would reverently prefer to say—is the greatest, infinitely the best, painter of these pictures made with plants, and we may only approximate the Master’s work.

Our first class demands the most consideration in garden planning. All these roses require segregation from other plants, carefully studied association with each other. The unit of their best use is the bed.

One's first thought of a garden bed is the familiar circle in a lawn space, and this comes just ahead of a succession of squared forms. Roses can and do prosper under such conditions, but at much inconvenience as to necessary attention, and at great loss of mass effect in beauty—and such plans are usually a total loss as to beauty in the picture.

The Hybrid Teas and their associates, the Teas and Polyanthas, need constant attention. When planted about a half-yard apart, as they like, such attention is more easily given if the bed is narrow and long, rather than broad, round, or square. The ideal rose-bed is 3 to 4 feet wide, and as long as is convenient. It may be curved if a curve best suits the garden design and is not introduced as a mere flourish. As I write these words I am looking upon plans for lawn beds presented in a recently published English work, in which the always necessarily narrow beds are fluted, voluted, curved, twisted, in fashions never seen on land or sea—and pretty rough to think about seeing in any garden; for aside from their



PLATE IX. The Polyantha rose, MARIE PAVIC, as used for a border.
(See page 82.)

inherent ugliness one must remember that the rose plant itself is not neat or shapely. Yet it does need neat surroundings, and these, if there are grass walks, as in the English case in sight, are exceedingly difficult to maintain in order when artificial convolutions in outline are used.

I have in mind a very lovely rose-garden on Long Island, in which, because of the contour of the land, sloping from a gentle elevation to the shores of Long Island Sound, it is necessary to terrace the garden area. Rose-beds do not seem to fit the face of a slope, and in this case a soft semicircle includes successive terraces, each one centered with its rose-bed 3 feet wide and broken into sections of about 20 feet in length, the roses being planted generously in groups of twenty-five of a variety. The effect when in bloom is good, either as one looks up from the low point or down from the high point, and the care to keep the garden in neat order is at a minimum.

These garden beds for the Teas, Hybrid Teas, Polyanthas, and others in the everblooming class need to be so placed as to get a free circulation of air, without enforced endurance of unchecked gales. As previously suggested, they ought to have sunshine at least sixty per cent of the time, with the morning sun preferred. This matter of

exposure and of backgrounds that are also wind-breaks is one of the factors to be taken into account in using roses with which to paint garden pictures. It seems best to place beds rather north and south than the other way of the compass.

No one more fully than I admires trees as garden incidents, but it must be stated that roses will not endure either their shade or their roots, at least at all "close up." The Queen sits well outside the tree's circle of influence, or she adjourns the court.

Mention should be made of the effectiveness of the Polyantha roses in beds or as borders of any length. Their agreeably low habit and their continual blooming provide us with a fine effect over a long season. (See Plate IX, facing page 81.)

Within this first class we have included the taller Hybrid Perpetual roses, which, planted sometimes farther apart than the dwarfer forms, do get leggy and show themselves without grace after their marvelous bloom display in early summer. I have before suggested the advisability of using the Polyantha roses with their dwarf and continuous-blooming habit to edge such beds, thus giving both covering to a certain extent and a bloom continuance that is satisfactory. For some reason I do not understand, the Hybrid Teas and

the Hybrid Perpetuals do not seem to mix with satisfaction to either. Nor do I find that these demanding Teas and Hybrid Teas do their best if they are in a bed or border bisected by a hedge of roses, be it informal and graceful or trained and formal. It may be the lack of air-circulation or it may be the root vigor of the climbers that interferes with success in what would seem otherwise to be an excellent arrangement.

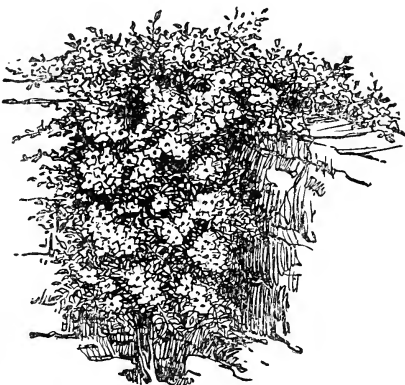
A word may be in place here as to the color arrangement of the everblooming types. It was rather a painful period in my garden experience during which I endeavored to plant everything in close color harmony or in studied contrast. Not only did I find the effort hard to endure, but quite unsuccessful in practice. When I referred back to Dame Nature, whose planting gives more pleasure than the planting of any human being, I discovered that all colors would work with all colors if a reasonable thought of proportion was used, as Nature somehow does it.

So while I presume I will continue to try to associate all the roses of yellow tone, and all the red roses, and to keep the pinks by themselves, I am serenely confident that however I mix them up I cannot make a mess of the exquisite colors

and the varied forms in which the Queen of Flowers appears for me. For convenience I know that it is better for me to keep some height comparisons in mind, and that it is a nuisance as well as ill-looking to have a tall-growing variety like Lady Ursula close to a sprawling sort like Chateau de Clos Vougeot. For convenience in combating the hated black-spot, I find it worth while to group together the indispensable sorts that seem particularly susceptible to this pest, because they can be more frequently and severely treated without feeling that one is insulting a well-meaning and well-behaving variety the foliage of which does not need to be so heavily dosed.

Using the
Hardy Climbers The Hardy Climbing roses which I have obviously favored in earlier chapters are useful in the garden and about the home in very many ways. In the true botanical sense, no one of them is really a climber, for in that sense a plant must be able to attach itself to any contiguous surface, as does the Virginia creeper, or the hardy ivy, or a certain delightful form of hydrangea. Roses as climbers are merely ultra-vigorous forms, the long stems of which are either not able to sustain themselves stiffly as does the stem of a tree, or are so flexible as to submit to training.

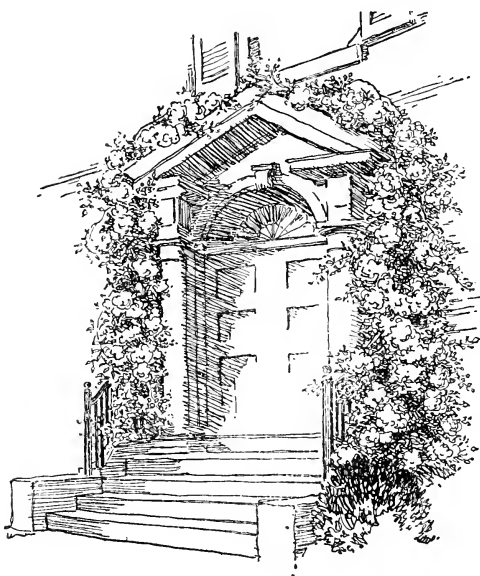
Thus the first use of these so-called climbing roses may well be to climb over something. If it be a wall or a fence any suitable climber will do the business with exceedingly little attention, for the shoots will scramble over or worry through any contiguous supporting opportunity, hooking their thorns to hold place. In putting roses to such use it should be kept in mind that while so treated they will continue to live and to provide a bloom display in early summer, the shoots or canes on the inside will eventually die because light is withheld from them, and the successive shoots crawling over these will not only materially extend the hedge or fence-covering but produce an effect which may not be as agreeable as the planter designs. Therefore it should be noted, in placing such roses, that at least every second year the most of the old canes are rigorously to be cut out close to the ground immediately after bloom has finished for the season. To do this with success requires long leather gloves, stout pruning-



A Climber in a wall-corner

shears, much determination, and a hard heart—particularly the latter!

For such scrambling fence, hedge, and cover operations, the stronger-growing roses are better.



A Hardy Climber over a doorway

American Pillar, Dr. W. Van Fleet, any of the Walsh ramblers, like Evangeline, Milky Way, Excelsa, and the others distinguished by particular vigor, will serve well this use.

A very satisfactory use of climbers as climbers is to train them to a trellis over a doorway or over easily provided arches. At Breeze Hill the effect is not

unpleasing of a practice which displays the hardy climbers along hedges designed to be not more than 3 feet high, with 7-foot posts at intersections and with arches over walks between two such posts, where that fits. The supporting basis for such treatment may be the impermanent

wooden posts, the somewhat permanent galvanized and preferably painted iron posts, or the entirely permanent concrete posts, the latter made small relatively by the use of a central pipe reinforcement, and also preferably made with such admixture of pigment in the concrete as will give a neutral and not a glaring gray-white finish. There are excellent forms of galvanized iron fence posts of various heights that serve well as a basis for these rose-fences or rose-hedges, but I would be less than honest if I did not caution any aspiring rose-grower



A Hardy Climber at an entrance

against the use of steel wire or steel posts as modernly made of Bessemer steel, which however excellent in structural use last only a few years when exposed to the weather. There can be obtained, I think, of the "Armco" manufacture, honest *iron* posts properly galvanized, on which may be used galvanized *iron* wire.

In preparing to train roses in this fashion it is not necessary to have wires closer than one foot apart, though those who can afford it can use any form of netting or any number of wires with no disadvantage. Most growers are, like myself, rather in preference to spend all possible money for plants and as little as may be for the supports and trimmings thereunto appertaining.

If the garden is carefully laid out, then it will be worth while in setting iron posts to plant them in concrete, so that they stay where they are put. I have sometimes been able to find second-hand pipe unfit for sustaining pressure from within which will, even though it be of the despised steel, answer excellently if set in concrete and kept painted, preferably with a neutral olive or neutral gray that simply disappears so far as color effect is concerned. Such is the foundation for certain garden entrances.

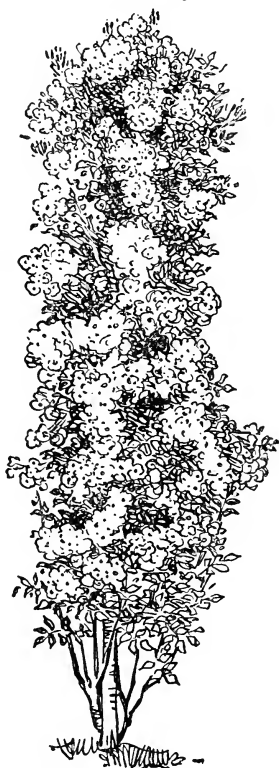
It is great fun to train the climbing roses to these trellises, whatever their nature, at least in the first year or two, provided always that one accepts thorns as a cheerful necessity. With just a little care in tying up the growing shoots, one may get ready for the reward in the following year, when the canes that have grown where one wants them to grow will have sent out their side-blooming

shoots, and these are making the rose display which is the reason for their existence.

Not by any means as frequently used as they ought to be are the pillars or posts, which because

Rose Pillars they are rose-covered become objects

of peculiar garden elegance. It is possible by the use of the pillar idea to have satisfactorily in restricted space a great many of the Hardy Climbers on trial or on display. The method is both easy and simple. The post which is to sustain the rose pillar ought to be iron, as above proposed, and it ought to be set with the rose, the height being, according to the inclination of the planter and the habit of the rose to be used, anything from 4 feet to 8 or 10 feet. As the rose grows, it is loosely tied to the post, and when the shoots have reached the height of the post or the determined point, their ends are pinched so that elongation is checked and new shoots



The Hardy Climber
as a pillar

from the base as well as side shoots encouraged. With three or four shoots from the ground properly twined around the post and to its height, there is every preparation for the beautiful thing that will happen next blooming season. Further growths from the root may be cut out with impunity, and the spread of the side branches beyond a matter of 5 to 6 inches is cut off continually. This produces a central grouping of four or more strong canes, each with its accompanying side shoots, kept short and columnar in effect, from all of which the next blooming season there will arise the growths that carry the flowers. Although this is not the place for the general discussion of pruning, it may properly be said that in the spring all these side shoots are shortened to not more than 6 inches from the main stem. Plate XIV, facing page 148, shows several pillars in bloom, as well as a very lovely arch of Lady Gay.

These rose pillars may be set as close as 4 feet apart, and when I am pinched for space a yard is all the separation I can afford in trying out new climbing roses. When one fails to be satisfactory it is removed and another trial is started. Rose-growing is no certainty, and I hope never will be!

I have mentioned the use of roses for ground-

covers. Such are called, properly, trailing roses, but they are classed among the Ground-Covers "creepers," and with one exception they are of *Wichuraiana* parentage. Any of the climbers may be used for bold effects on slopes, as, for example, has been done along a railroad near Merion Station, in Pennsylvania, by Mr. Edward W. Bok. In the closer home use, however, the purely trailing roses had better be used. The *Wichuraiana* species is a trailer, and its fine hybrid, Alberic Barbier, trails agreeably, though it also sometimes freezes back disagreeably. Among the finest possible trailers is Mrs. M. H. Walsh, which retains the glossy foliage of the type, but with added hardiness and a curiously clinging habit. It would be worth while even if it did not have its mass of double white flowers.

The one exception to the *Wichuraiana* parentage of the trailers is the rose Max Graf, presumed to be an accidental hybrid between *Rosa setigera* and *R. rugosa*. It is ruggedly hardy, a true trailer, and carries the *Rugosa* or wrinkled foliage of one of its assumed parents on its long, flexible canes, which in June are covered with very large and very lovely single pink flowers. This comparatively new rose is probably the very best of all trailing roses, and will serve well as a ground-cover.

There is an easy intermingling of the roses adapted for so-called shrub use with the class just discussed, because any of the vigorous

Training
as Shrubs Hardy Climbers can be given place in the shrubbery if it is properly trained.

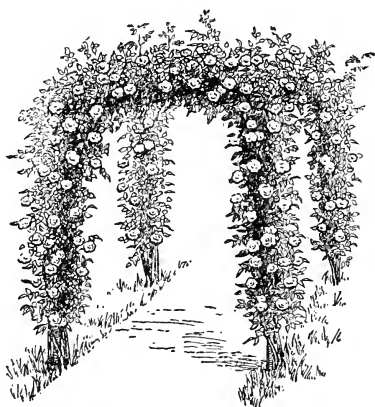
This does not mean that it is necessary to erect an elaborate framework. It does mean that as the long pliant canes of the climbing rose arise they are first tied to two, three, or four stakes driven about the plant, and then when they have attained sufficient length are trained in on themselves, being tied one to the other so as to form a rough approximation to a balloon. After a little time such a rose is wholly self-supporting and independent of the stakes, and it forms a lovely and satisfactory object in the shrub border. Or instead of being so trained in the balloon shape, it may be with equally slight handling given the vase form, with the growing shoots left to droop outward from the center. This takes more room and the resulting shrub may injure itself in heavy wind-storms. Plate XV, showing opposite page 157 the *Cathayensis Multiflora*, is an example of this training, as also is the plant of *Rosa setipoda* shown on Plate V, facing page 49.

Next in usefulness in the shrubbery are the *Rugosa* hybrids, as well as the forms of "straight"

Rugosa—white, pink, and magenta. All these Rugosas are superb for hedges, ruggedly hardy, and if a little care is given they can be made well-clothed and very satisfactory shrub objects. They are also valuable because of their content with sand and with salt air.

Mention should here be made of one or two of the Hybrid Rugosas as needing and repaying particular care. The hybrid, Conrad Ferdinand Meyer, makes tremendous, sturdy canes easily running to 10 or 12

feet in a single season in good garden ground. It has a counterpart in growth in Nova Zembla, equally vigorous, and desirably planted with it. If these two sturdy roses are planted 4, 5, or 6 feet apart, and toward the end of the growing season their great canes are carefully tied together to form an overhead arch



A four-post arch, covered with the Hybrid Rugosa, Conrad F. Meyer

or similar structure, there will result very early the next growing season a thing of great beauty, for instead of blooming at the terminals, bloom wood

will spring from practically every bud along the portions curved over. As Conrad Ferdinand Meyer has very large bright silvery rose blooms, full, double, and exceedingly sweet, and Nova Zembla has equally large, full, and fragrant flowers, almost pure white, the resulting display is well worth while. Another method uses four plants, placed to form a four-post arch. This was made with four 1-inch iron posts, at the corners of an 8-foot square, with a round $\frac{3}{8}$ -inch rod sprung from each corner diagonally, and fastened where these rods intersected. To this framework the rose canes are trained, with a fine result. (See page 93.)

A very satisfactory *Rugosa* hybrid has been mentioned previously under the name of F. J. Grootendorst. It is of somewhat less rampant growth than other sorts, but will soon make a bush 4 to 5 feet high, with good characteristic *Rugosa* foliage, well clothed along its length, and with a constantly maintained showing of flowers, described as being like those of a red carnation. This *Rugosa* hybrid has been found quite useful as a corner post, for example, for beds of Hybrid Perpetuals.

In the preceding chapter, mentioning some of the less usual roses, I brought to attention particularly *Rosa Hugonis*, the lovely yellow-flowering

Chinese native with its graceful habit and distinct foliage. I have never yet had the pleasure of seeing a hedge of this rose, but I hope to see it. I do see it in the shrubbery as a delightful incident, beautiful not only when it has its wonderful covering of yellow blooms on display, but later with its foliage and twigs.*

Then I mentioned also the *Spinosissima* hybrids and *Rosa altaica*, all of which are of shrub value, as also are the Hybrid Sweetbriers and many other of the species roses. We must, however, consider where these shrub roses are to be placed. They are not for the small rose-garden or where space is too precious to be given to varieties that bloom but once. They are for the larger areas, for places too exposed to do justice to the everbloomers, and for those whose insatiable interest in the rose family makes each form into which God has put the rose spirit worth association with.

The so-called "tree" roses, which are better called standard roses, are but little used as yet in America, though they are in great demand and constantly found in England. As will be seen from the illustration found on page 76, the tree rose is one in which any desired variety has been budded or grafted on a

Tree Roses

* See illustration of Hugonis bloom on Plate VI, facing page 52.

single central stem at between $2\frac{1}{2}$ and 4 feet in height, so that there results a pseudo-trunk to the little tree with a head of the variety used.

I want to be fair to any form in which I find the rose, but I could get along better without tree roses than without any others. They strike me as peculiarly artificial and their use as introducing many dangers. I have seen them as exclamation points in a garden, when they were altogether agreeable and in place. I have also seen them when they were as incongruous as was a display of a dozen Kilmarnock weeping willows which met my astonished gaze on a countryside trip several years ago. Evidently the artificially graceful form of this peculiar willow had been represented by the tree agent to the victim with such success that he thought it was wise not only to have one in his front yard, but a dozen of them! The result was amazing, to say the least.

There is one rather definite reason why the so-called tree roses will never be freely used in America. It is because our hard winds and brilliant sun dry out the central stem, which is much more easily protected and kept in health in the humid climates of Europe. These stems are usually a form of *Rugosa*, though I have in my own garden one in which *Radiance* is the head and *Radiance* is



PLATE X. FERN KEMP, an unbudded natural Rugosa standard grown by Mr. J. A. Kemp. (Conrad F. Meyer \times Frau Karl Druschki.)
(See page 97.)

From the "American Rose Annual," by permission.

the stem, and radiant is the result, the whole makeup of this Florida-grown rose being far more pleasing than the dog's-hind-leg sort of stem characteristic of the Holland-grown *Rugosa* trunks.

Now having said all this as to my more or less prejudiced personal opinion of these peculiar forms, it is only fair to call attention to the necessities for their prosperity. They must be planted in rich ground. Further, the stem must be supported by a stake of some sort, the best form of which is said to be three laths nailed together to form a shallow channel and driven into the ground, with the bottom lath toward the hottest sun and severest wind, before the rose stem is secured in the open channel. Painted dull olive these stakes are not offensive.

In winter, protection is best given the standards by simply digging them out, laying them down and covering them all over with earth.

The natural *Rugosa* standard shown on Plate X is "own-root," being a hybrid raised by Mr. J. A. Kemp, and easily grown to 7 feet in height. This is altogether different, and worth while.

Much was said at the outset of this chapter concerning the apparent insistence of the Queen of Flowers on adequate and satisfactory surroundings. I have previously mentioned that

contiguity to trees or rapid-growing shrubs is frequently fatal to rose prosperity.

I may for emphasis again insist that while roses do need free air-movement, they ought not to be subjected to the fierce sweep of long-continued winds. A reasonably distant windbreak in the direction from which Boreas sends his sharpest blasts will make for rose prosperity.

If I might venture a prescription to the rose beginner who has a small area, it would be that he start with just a few roses which his consultation of these pages and the catalogues lead him to believe to be hardy or can be protected in his latitude. If his first dozen give him a flower or two from each plant during the season, and if half of them live through the ensuing winter, he is in the way to become a real rose-lover, and is likely to begin to adventure in the catalogues and for himself, to great satisfaction whether he succeeds or not. He will talk with others similarly inclined, and he will read, but his best results and his greatest joy will follow the intimate experience which is his own, but which he will quickly tell others. The true rose-lover does not live by prescription but by experience.

A Rose
Prescription

CHAPTER VI

ROSES AWAY FROM THE HOME

THAT the rose is truly universal in its adaptability, even though not as yet in its use, is proved in its relation to the greater displays existing and possible in parks and great gardens. Peculiarly a flower for the home, and always first to be considered in its relation to the home aspects of human life, the supremacy of the Queen of Flowers is shown nowhere else so definitely as in broad uses outside the home garden.

When parks were misunderstood as primarily places in which the wealthy might drive in their equipages amid decorations of statuary and formal flower-beds, there was no such thing in existence as a municipal rose-garden. The democratization of the parks, the growth of the understanding that they are not frills on the body politic but essential to human welfare and human efficiency, carried with it the highest service of recreation in providing in the more enlightened localities roses as the one most attractive feature to give rest to tired human beings.

Let me prove this statement. The municipal rose-garden in Elizabeth Park, Hartford, Connecticut, was, I think, the first of the Great Park Rose-Gardens great park rose-gardens. It was, to quote Mr. G. A. Parker, Superintendent of Parks in Hartford, "designed, constructed and planted in 1904 by Theodore Wirth, then the park superintendent, at a cost, as shown by reports, of \$2,682.96. . . . The garden consists of 54,500 square feet, or $1\frac{1}{4}$ acres. The average yearly cost for maintenance . . . has been about $2\frac{1}{2}$ cts. per square foot. . . . There are 116 rose-beds . . . about 300 different varieties of roses, and about 1,500 separate plants. . . . Measured by the acre at the present time, an acre of the rose-garden attracts about 85,000 people each year, or at the ratio of two persons per square foot of area. It is doubtful if any other single acre in the open of the Hartford park system attracts so many persons to it."

Mr. Parker goes on further to insist that the rose-garden "probably attracts 10,000 people from outside the state every year. . . . As an advertisement I think the rose-garden brings back a greater return in money to the city than is expended for its maintenance. . . . It adds to the beauty and pleasure of many a private home, for



PLATE XI. In the Elizabeth Park Municipal Rose-Garden, Hartford, Connecticut. (See page 100.)
From the "American Rose Annual," by permission.

many people come to the rose-garden not only for the pleasure while there, but take notes and purchase roses they like for their own homes.

“Much greater than all beneficial results is the influence of the beauty of the roses upon the individual. . . . I have come to think of beauty as the love-letter of the Creator, through which He is wooing us unto Himself; for beauty is spiritual, and not physical. . . . Surely the Creator uses a most beautiful form when He avails Himself of the roses to convey His message! . . . The rose-garden then tends toward the healing of the spirits of the people, as well as being a source of strength, courage and pleasure. No money estimate can be put upon this value.”

The same great spirit who brought into being the Hartford rose-garden has done as well in the far more difficult climate of Minnesota. Mr. Wirth has established in Lyndale Park, Minneapolis, a two-acre rose-garden, including some 3,000 plants in 215 varieties set in 64 beds, and enclosed within trellis work which forms a basis for the climbing roses. He points out even more emphatically one result reported in Hartford by Mrs. Parker, in these words: “The great increase in the use of roses for the decoration of home grounds and gardens in our part of the country is largely due

to the demonstration in this municipal rose-garden. People come long distances to see the garden. . . . They become acquainted with the roses, and make their own selections."

In the national capital, beautiful Washington, a rose-garden has been started in Potomac Park.

Chicago, under the inspiration of Jens Jenssen, a landscape architect of broad imagination and equal executive ability, has used roses remarkably in her parks. Nearly 7,000 plants are in Humboldt Park, growing in a formal garden of effective design, while Douglas Park and Garfield Park likewise include impressive plantings, distinguished by great masses of one variety. In addition, slopes are planted with native roses, and this use of the Queen of Flowers persists even though Chicago's smoke makes roses suffer. (I wonder whether any community on earth claiming to be civilized can justify forcing humans to live, or to exist, in an atmosphere that chokes roses!)

Yet onward with the sun we find the love of the rose bringing about great plantings for the public advantage in St. Louis. Here in the Missouri Botanical Garden, familiarly known as the "Shaw Gardens," by reason of the donor, not only has a public rose display in a great design proved successful, but there has been provided a "Model

Back-Yard Rose-Garden," to encourage homeowners, and to set an example of what might be accomplished. In this varieties are planted on test of their adaptability, to the vast advantage of the people who see and profit by the display.

The most effective and spectacular use of roses in America in any public way is surely in Portland,

Portland Roses Oregon,* the "City of Roses"—a name justified by the miles of streets on both sides of which roses are in double rows between the sidewalks and the traffic space for vehicles. There the front yards, side yards, and back yards alike have roses and yet more roses, to say nothing of the displays in the parks. The June "Festival of Roses" checks the business of a great city, or rather makes it the business of a great city to do homage to the Queen of Flowers. Competitions, decorations, processions—all of roses, with roses, about roses, characterize this gala day. A strong organization, "The Royal Rosarians," further fosters rose effort.

The Portland showing depends on a marvelous climatic paradox, whereby in the Pacific Northwest, well beyond the apparent latitude of rose comfort as to winter temperature, there are repeated the temperate winters and the humid air

*See Plate XX, facing page 224, "A Portland Rose-Garden,"

of England, with American improvements. Not only does the main standby for street decoration, the Hybrid Tea Mme. Caroline Testout, here flourish marvelously and bloom abundantly, but all other roses do their best, even to the winter-hardiness of Gloire de Dijon and the occasional carrying over unharmed of Maréchal Niel.

It is in Portland that the city, at its own cost, has established a municipal rose-garden designed and operated to test new varieties, for the advantage of its citizens. This garden has been located in a selected and favorable place in Washington Park, with ground available so that it may cover 10 acres if need be. In announcing the establishment and the basis of this novel municipal enterprise, the mayor of Portland (then Hon. George L. Baker), in the 1918 "American Rose Annual" thus set forth the fine plan of operation:

This new garden will be devoted only to the cultivation, care, and development of new roses, or those which have not been in commercial use more than one year prior to being sent to the garden for testing. The roses will be given three tests, and the treatment they receive in each case will be varied. . . . The score made by the new rose under these conditions, it is believed, will show its true value for outdoor culture. The superior roses each year, both dwarf and climbers, will receive suitable medals and other tokens from the city of Portland and the organizations coöperating with it to make the new garden a success,

Through the energetic work and the rose wisdom of Mr. Jesse A. Currey, this test-garden has functioned most successfully and with a constantly increasing range of usefulness. Not satisfied with having 22,000 rose-gardens in Portland alone, the organizations that push the city's interests have combined to make a "roseway" of a 3-mile connection with the Columbia River Highway.

Other cities in the favored Pacific Northwest are scarcely second to Portland in rose enthusiasm and rose prevalence. Seattle is a center of rose-lore, and so is Tacoma—both in the favored Puget Sound region.

Thus the rose in America crosses the continent in its municipal relations. I have not proposed to catalogue here the communities, large and small, in Canada as well as in the United States, in which the rose is in such public esteem that it has all or a part of a great garden for its display. Such a list could not be accurate for a month, for even in the dead of winter some rose enthusiasts somewhere are getting into official relation with the one flower that unites north and south, east and west, without relation to race or wealth, to population or industry.

A peculiar and most important place for the

rose in great plantings is in those wonderful open-air universities, the botanical gardens, where the species are planted in relation and for comparison, as well as for their unique landscape value. Highland Park, in Rochester, New York, is such a place. To it resort tens of thousands of the people who enjoy the rhododendrons and the lilacs, the spireas and the deutzias, and all the notable gatherings of hardy trees and shrubs there in beautiful showing. The area devoted to a most comprehensive planting of hardy rose species and varieties always attracts; the people love these unusual roses.

Not very far away, at Ithaca, Cornell University maintains a great rose test-garden of much educational value.

The Arnold Arboretum,* in Jamaica Plain, Massachusetts, a part of Boston's park system so far as the roadways are concerned, a part of Harvard University in official relation, is in fact America's most important outdoor living museum of the world's best in trees and shrubs that will endure that climate. It is strong in roses, particularly of the unusual kinds. To it have been sent or brought by its world-scout, Mr. E. H. Wilson (from whose writings I have freely quoted

*See Plate XII, facing page 109.

in earlier chapters), the beautiful and valuable Chinese native roses that work into our flora so well, and from it go knowledge and suggestions looking toward greater rose use. Its director, Prof. Charles Sprague Sargent, to whom, for his devotion to the improvement of our gardens, America owes a debt that can never be paid, is "rose-wise," and his use of the native roses of America and Asia in the plantings along the roads in the Arboretum has acquainted many thousands of visitors with new beauty.

Similar rose advantages are at hand in the New York and Brooklyn Botanical Gardens, where also are fine plantings of the garden varieties.

The value of the rose as a therapeutic agent has been recognized in that vast institution, the
Hospitals and Jails Walter Reed Hospital of the United States Army, in Washington, D. C. A great rose-garden is part of the formal planting undertaken to be "of direct aid in the restorative work of the hospital," to quote the authority on the subject. Here has been seen the spiritual power of the rose—a power that can do what medicine and surgery cannot do!

Other hospitals in other places will follow, without doubt, for the appeal of the rose is universal, even if silent.

A penal institution is by no means accessibly public, and it may seem odd to refer to one in this connection. Yet no thoughtful man or woman can avoid the feeling that a penitentiary is in fact a hospital for the cure of mental disease, not seldom caused by physical disorder. In at least one such institution the warden, wise with Christian wisdom, has seen the value of the rose, and it there blooms in its innocence and sweetness where it can do most for the healing of distorted conceptions of right and might. The roses used were freely contributed by men and women who quickly saw what new opportunity could thus be opened to the Queen, and they are lovingly cared for by convicts who find thus a tie with freedom.

Roses as a part of school education? Why not? In more than one city the fine spirit of a rose tradesman has made roses available to boys and girls under school relations. There is no record of neglect; there is always success in this service to the finest spirit a boy or girl can have, the love of flowers. As America really accepts the rose, school gardens will have roses, school grounds will show the shrub and the climbing roses for their educational as well as their beauty value, and the young people will know roses as they know figures.

Roses
and Schools

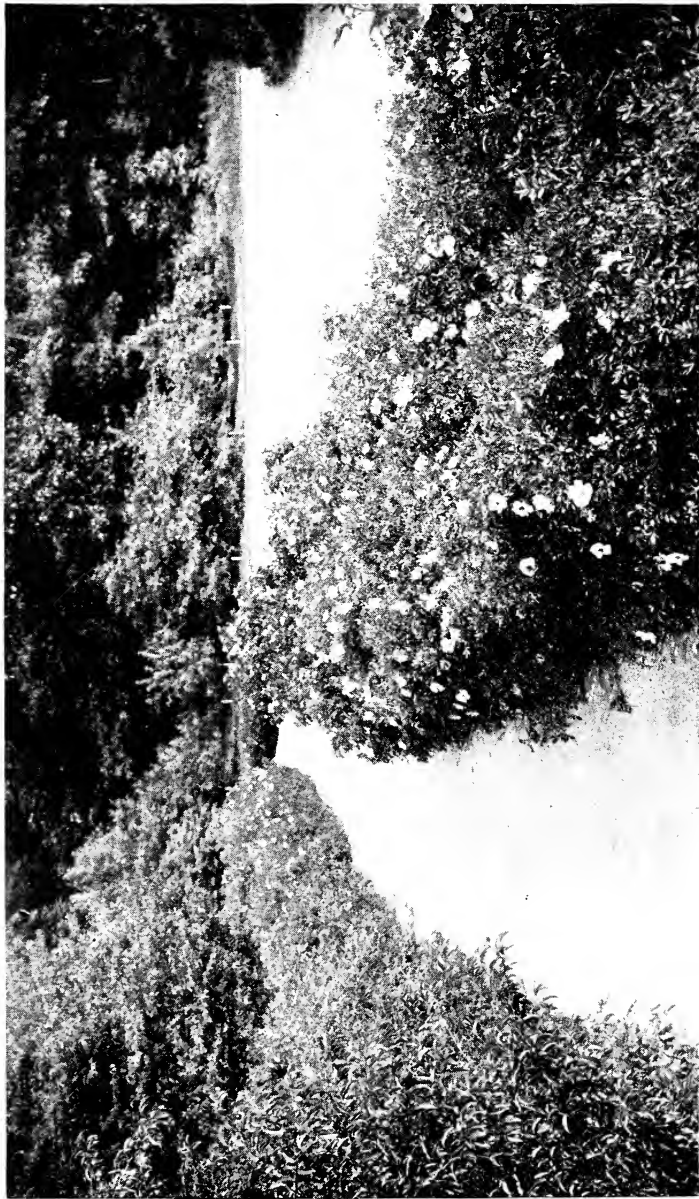


PLATE XII. A rose-bordered roadway in the Arnold Arboretum, Jamaica Plain (near Boston), Mass. (See page 106.)
From the "American Rose Annual," by permission.

Considering the rapid spread of the good-roads idea in America, it is not to be wondered at that a real rose-lover should be inspired to want these great highways made lovely as well as easy to travel upon, through the proper planting of roses in suitable sections along their borders. A dozen years ago the value of this sort of adornment was proved in Harrisburg, where a quarter-mile of parkway had planted along its north side a border of the Crimson Rambler. That section has become a point of major attraction in rose-time.

Earlier in this chapter there is stated the plan in Portland, Oregon, to "rosify" a 3-mile connection with the Columbia River Highway. From Los Angeles runs a main road, lined on either side with roses for 20 miles. Why not have hundreds, yes, thousands of miles of permanent through highways in America adorned with the roses of the neighborhood, the shy but thrifty and lovely wildings that will care for themselves when once set out?

Slopes may thus be protected against erosion. True, such planting might grieve the average road supervisor of the Eastern States, whose scythe is so efficient as he swings it to cut off and destroy all the beautiful native growths along the highways, at the same time encouraging the briars and docks

and thistles that are stimulated by his stupid vandalism.

All the native roses are suitable for such work, each where it is locally at home. The husky ramblers are also admirable either to trail or to sprawl. If the planting is extensive, and if an occasional example is made of punishment for the automobile despoilers, these plantings would give supreme beauty at bloom-time, constant greenery and neatness for the remainder of the growing season, and satisfactory ground-cover maintenance for the roadsides.

About the last persons to be expected to see value in roses are the maintenance-of-way engineers of the railroads! Yet the story of "Roses in Railroad Economics," printed in the 1920 "American Rose Annual" tells and proves that value as shown to the patrons and the authorities of the New York, New Haven & Hartford Railroad. A great "cut" near Mount Vernon, New York, several miles long, and in places over a hundred feet deep, was improved with roses. Let the railroad man tell the story:

The ditches along the track were concreted, the long, sloping sides of the cut were planted with Dorothy Perkins roses, and then the whole surface was strewn with grass seed. The result has been a transformation of this part of the line. For weeks in the spring, travelers passing through

this cut see the slopes above their heads a mass of pink roses against a background of greensward. Each year the display grows more beautiful. Many travelers have wondered where they came from, thinking perhaps they were wild roses. On all sides have been heard favorable comments on the scene presented to them.

From time to time, when it has been necessary to do trimming, the company has made many thousands of cuttings, which have been transplanted along the division between Mount Vernon and South Norwalk, also at frequent intervals beyond. The roses are planted on both sides of the embankment, at all suitable places where it is expected they will flourish. It would be a very difficult matter to estimate the number of rose-cuttings or cuttings from other shrubbery, as they run well into the tens of thousands. It may be stated that the roses serve two purposes: First, the beautification of the road; second, the strong roots of the bushes assist in keeping intact the sides of the cuts.

This fine work undoubtedly followed the first instance of the sort, previously mentioned, the planting of an embankment near Merion, Pa., along the line of the Pennsylvania Railroad, at the instance and the expense of Mr. Edward W. Bok, then editor of *The Ladies' Home Journal*. His reason for the planting is characteristic of this man of fine civic spirit:

I made the planting with a view of introducing the idea of having large numbers of blooming plants in a public position where the people could enjoy them, and yet not pick them—in other words, educating the people up to a love of flowers without the desire of possession. Then, too,

I wanted the people on through trains to the West to stop talking dollars and cents for a few moments and fasten their minds on flowers.

What a change would occur did other such men and other railroad executives see the true economic value of the rose along railroad rights of way!

It may be in point to say here that such plantings can be made at comparatively small cost. To excavate a "pocket" of the soil on a bank, replacing it with nearby top-soil; to do this every 6 to 8 feet; to insert a rose-plant, solidly set, cut off just above ground, or even to bury in each pocket to the top bud late in the fall a half-dozen unrooted cuttings of a hardy climber—that is about all for man; God's nature forces do the rest.

Let me propose varieties for this use, south of Albany, N. Y. They might include Dorothy Perkins, Mrs. M. H. Walsh, White Dorothy, Evangeline, Paradise, Milky Way, Excelsa, Gardenia, and where the slope is long, even American Pillar, Silver Moon, Dr. W. Van Fleet, and similar strong growers. The finest of all trailers, the notable hybrid, Max Graf, is as yet too scarce, but will come to be available. As mentioned on page 91, it is a true trailer, hugging the ground, and its long shoots produce lovely and large, light pink single blossoms, as well as fine foliage.

When these rose-banks become massed and entangled, they can be renewed by cutting off all the stems with a sickle, scythe, or brush-hook.

The great landscape artists of America recognize quite fully rose values for their work. Mr.

Charles Downing Lay, the editor of
Landscapes *Landscape Architecture* thus writes:

These common wild roses may be used with other shrubs in any thicket, or they may be planted in masses, each variety by itself, or several varieties may be associated in a plantation. They fruit abundantly, and the hips are of considerable beauty and interest in the winter landscape. This is a matter of great importance, for the shrubbery in winter should be as beautiful, though less showy than in summer. Indeed, I often think our native shrubs are more beautiful in winter, when the brilliant luxuriance of full foliage has given place to the more subtle hues of the bare branches. These bare branches are full of delicate misty colors when seen in mass, and in the rose they have a wide range, from pale green to rusty greens, bronzy reds, and quiet crimson.

The roses show remarkable variation in height and in habit of growth, so that they can be used in many different situations. They are easy to suit as to soil, and can be grown along meadow streams, on rocky hillsides, or on the sandy beach, often appearing where few other plants will live.

Their use in the landscape is important, for the native varieties are characteristic of much of our eastern scenery, and when planted in quantities they give that appearance of natural wildness which is more and more coming to be the ideal in parks and country places. . . .

I doubt if any shrub makes as good a cover for birds

winter or summer. They are difficult for cats to penetrate, and a thicket of *Rosa multiflora* and *R. setigera* is impassable for man or boy. The rose thicket needs no care when well started, except to cut out seedling trees which may appear. In fact, they are so thorny that care of the ordinary sort is impossible, and even the most Teutonic gardeners will cease in disgust their efforts to mutilate a rose shrubbery. . . .

Along the coast, whether rocky or sandy, *Rosa lucida* is probably the best. Under these hard conditions it may be only a few inches high, but it will bloom, hold the falling leaves and the drifting sand, and gradually by its mere presence ameliorate the conditions. On the rocks also it may be dwarfed, but it will still bloom and hold the soil.

In wet meadows, *Rosa carolina* will probably be best, growing tall and strong, and showing its head above the spirea, the blackberry, and the button bush. The plants can be used in any naturalesque landscape. . . .

Their season of bloom stretches over a long period, and if native and foreign roses are used together the plantation will have color in spots for six weeks or so. This mixture of varieties has great advantages for the roses, for they seem to help each other, the good foliage of one hiding the thinness of its neighbor's dress. . . .

It would be difficult to imagine a more lovely plantation than a long thicket of our native roses, bordering a road, for instance, beginning with *Nitida* in front, then *Blanda*, *Lucida*, and *Lucida alba*; these in turn broken by masses of *Multiflora* interspersed with *Setigera*, *Rubiginosa*, *Rubrifolia*, etc. The whole to be backed up by other families of the rose order, such as the native hawthorns, plum, flowering cherries, and flowering apples. This would not be without some bloom from the time of the earliest plum blossom to the last blow of the *Setigera*; and such a planting cannot be surpassed in delicacy of autumn and winter beauty.

The amateur who sees in these wild roses their unusual availability, their great potentialities for beauty in large plantings, is referred to Chapter III for further suggestions as to species.

Great
Rose-Gardens Great private gardens would be weak without roses, and when these gardens are opened at least at times to the public they serve a most beneficent purpose. The larger spaces and the greater number of items permit the working out of lovely pictures. I am looking at the plan of such a garden, planted on Long Island, N. Y., and I am thinking of the way roses serve in a splendid garden in Brookline, Mass. Then my rose memory takes me quicker than wireless could flash again to Long Island, where I see a background of old trees, with curved and terraced slopes toward the distant Sound, made bright by beds of Hybrid Teas. Then to Washington, to walk under rose-arches in earliest June, wishing I had two pairs of eyes, to see at once the beauty overhead and on the ground, and to talk with many true rosarians.

These rose memories! How precious they are, and how permanent! They enliven, they rest; they quicken, they soothe; and the best of it is that they are best when I can think of the friends with whom I have shared their sources. The rose

is never selfish. The perfume is sweeter, the color is brighter, the form more entrancing, as its enjoyment is shared with anyone in the rose democracy.

Sometimes I dream of great rose areas that as yet have never been. I see somewhere in a public park a hedge of Sweetbriers, sheltering groups of familiar and fragrant roses of the garden. There opens farther on another garden of the wildings of all lands, and it leads to a garden of perfume roses, such as Dr. Van Fleet once dreamed with me. I think of what these gardens of bloom and sweetness, of education and elevation, would do for the roseless millions of a great city, living in its roar and racket and limitations.

Will these dreams of the rose away from the home grounds ever come true? I know not; but I have had them, and I have seen enough of rose fairyland that has actually bloomed to give me right to dream for myself and for every rose-hungry human, sure that God sent the roses which founded the dreams, and just as sure that He would have me thus dream.

CHAPTER VII

MAKING ROSES GROW AND BLOOM

VIRTUALLY all specific rose-growing in America is unnatural, just as most fruit-growing in America is unnatural. The natural apples we might pick from the wild crabs where they are native in the woodland would hardly satisfy the cultivated taste for the fruits which have come to make America famous. The wild roses of the meadow, the prairie, and the roadside are delightful to see, and have their place in some of our gardens, but they do not give complete rose satisfaction to most people.

Some good roses will grow almost anywhere, and it takes considerable neglect to kill some of the stronger-growing Hybrid Perpetuals and ever-blooming roses. Yet it is so well worth while, in increased number and beauty of blooms, and in lengthened season of bloom, to give them all that they need, that attention to the essentials of rose prosperity is the basis upon which any worthwhile rose operation rests.

Elsewhere the rose plant itself is discussed, and

in this chapter we are assuming that the would-be grower knows what he wants and has purchased some rose plants. If he is reasonably wary, and prefers not to buy all his experience, he will begin with dormant field-grown plants, and he will buy them early enough, be it fall or winter, so that they may be planted as early, if it is in spring, as the ground can be dug and worked. It is better to buy and plant late than not at all, because some of the late-planted roses will probably prosper, but for every reason it is worth while to buy early, receive early, and plant early. Moreover, early study and early purchasing usually get the best plants.

Meanwhile, if he is wise, he will have made certain preparations for his rose-planting. Of the first importance is the soil in which the roses are to grow. In discussing it I am minded to quote from a letter written to me several years ago as editor of the "American Rose Annual," in which, after telling about his careful preparations, my correspondent wrote: "You can make hens lay, and cows give milk, and rose bushes bloom, but let me whisper in your ear, Mr. Editor, that in order to do so you must be Johnny-on-the-spot every time." Another successful rose-grower says of her roses, "I just love them up."

The prescription, therefore, with which one approaches the matter of soil preparation is that of being willing to work for results with love, energy, and industry.

If anyone will thoughtfully examine a rose plant as it comes from the nurseryman, he will note that however complete the root-system, it bears no evidence of ability to range far for food and water. I have found the roots of the ailanthus tree 60 feet from the tree's trunk, and I have heard that the alfalfa plant has penetrated the soil to a depth of 11 feet, but I never found a root of a Tea or Hybrid Tea rose that had strayed much more than a foot in any direction from its original setting. Therefore it is obvious that if these roses are to receive food it must be close by, where they can get it. As Dr. Jodidi, a chemist in the Bureau of Plant Industry of the Department of Agriculture, writes about the rose plant, "In return for the beautiful flowers it so bountifully showers upon us, it ought to be given all the plant-food it possibly can take care of."

Generally speaking, it is agreed that the rose prefers heavy soils, though the tremendous luxuriance of some roses in Florida, where there seems to be nothing but sand, indicates that to this tendency there are conspicuous and striking excep-

tions. That most successful gardener, Mr. W. C. Egan, writes: "My soil is a yellow clay loam, an ideal one for roses and for most plants." A correspondent in Canada tells us that gravel was removed and heavy clay substituted in preparing for a fine little municipal garden, while another successful worker in the Finger Lake Region of New York tells of what she has done with sandy loam. In Arkansas there lives an architect who besides designing great buildings is a great rose-grower, and he has added "bright yellow clay that had quite a bit of sand mixed with it" to the soil of his rose-garden. Mrs. Francis King, not only a great gardener but a great writer on gardens and a great organizer for good gardens, says, "In my own garden the soil is a rich loam on clay."

I might go on and quote for pages from rose-soil experiences related, and it would all merely show that roses flourish on very many soils if they are given food with which to flourish. Here, then, is the first basic fact, that to succeed, roses must have plenty of food, and have it close enough to use.

What constitutes "plenty of food"? All I can find in a correspondence from thousands of rose-lovers over a period of many years, and all that I have found in my own experience, warrants me in saying that up to a

Plenty of Food

full third of the bulk of any soil preparation made for rose prosperity ought to be well-rotted manure. We can begin, then, with the provision of enough of this near-essential, or if we cannot get it we can consider any other form of humus that carries with it fertility. Whatever trail we take will return to the extreme desirability of plenty of rotted animal manure. The old notion that it must be cow-manure has been long exploded. Horse-manure, hog-manure, barnyard manure, any other animal refuse thoroughly decomposed and in a state which will permit its intimate admixture with the soil, will make roses grow.

Granted that we have the manure and that our soil closest by is the soil we must use, then what about the preparation? In answer to
 Deep Preparation? that I may be considered heretical when I cast doubt, much doubt, on the statements made by rose writers from time immemorial as to deep preparation. One enthusiast speaks of removing the earth to a depth of 4 feet; another, slightly more moderate, wants a trench dug in which a yardstick will come level with the outside soil. The generality of these writers stand at 2 feet as the minimum necessity.

Yet what does one find who exhumes rose plants? Are there roots 2 feet down under an

average Hybrid Tea? I have never found any! I have found the expensively placed manure still there, rotted and useless, but I have not found any roots in it.

If we take into account the fact that the rose Queen is as dainty as any other fine lady in her unwillingness to endure wet feet, we will first arrange the depth of our beds according to the drainage quality of the land we are using. If the rose-bed is to be made upon a clay hardpan with a practically waterproof bottom, it may well be desirable to go down at least 2 feet and to fill in the lower 6 inches with any loose material that will receive and drain away superabundant moisture. If, on the contrary, the subsoil is loose and open, permitting water to pass freely through it, I have come to believe that effective and thorough preparation to a depth of 18 inches will provide for reasonable and continuous rose prosperity.

I mean all I have said, however, in respect to the preparation being effective and thorough.

Thoroughness Given that the drainage does not have to take any part of 18 inches, then the depth of two ordinary 9-inch spade thrusts, cleanly and straightly driven down, all of the soil having been thoroughly turned, stirred, and intimately intermixed with well-rotted manure

up to one-third the whole bulk (and if it is heavy soil the much-needed humus afforded by chopped-up sods, rotted leaves, or similar material), will provide root-range and feeding-ground for many years of following rose happiness. I ought to say that if the soil is acid or "sour," as it is where blueberries flourish, it will be better for roses if it is given a coating of air-slaked or hydrated lime.*

Has the reader noticed that I spoke of driving the spade "straightly" down the full 9 inches of the ordinary tool? It takes both muscles and persistence to do this, and persistence and a club to get it done, for the average digger slants the spade and skimps the stroke, so that the soil is lifted or stirred barely 6 inches deep. (The "Luther Burbank" spade in use at Breeze Hill has a blade of 12 inches from point to heel, and it is a real tool.) The "trenching" method is requisite for first preparation; it implies the actual lifting out of the first spade depth, or "top-spit," as the English call it, so that when also the second depth has been excavated, the mixture of manure

*Inquiry may be made as to certain "special beds" designed some years ago by the late Frederick W. Taylor, of efficiency fame. These rose-beds, prepared in diagonal layers at great expense, were presumed to be an advantage for certain roses. Capt. George C. Thomas, Jr. has fully reported in his admirable book, "Outdoor Rose-Growing," upon the Taylor special beds, and I quote his conclusion: "We cannot see enough advantage gained to warrant our recommending his beds for general use."

and top-soil can go to the bottom. It is much easier to improve and fertilize the upper layer later; get the bottom right first, because it is out of reach.

This rose-bed preparation can best be made the fall before the plants are set, if we are to plant at all in the spring. In any case, it is a great advantage to have had the soil prepared long enough before the plants are at hand to permit it to be rained upon and to settle.

I confess to a preference either for fall planting or for the very earliest possible spring planting, my preference being based on disastrous experiences with late spring setting. Without any scientific study or microscopic examination, I believe that rose roots function moderately all winter, and that they get vigorously busy very much earlier in the spring than is generally understood. It is because I would like to have them get busy for me in my garden that I want the planting completed in fall, or at least that the plants are then sent me, to be carried over where I can have them ready for the earliest spring planting. If this cannot be, I want them from the nurseryman in the spring at the earliest moment, even if the ground is too wet on their arrival for immediate planting.

I set this matter out thus a second time in the hope that many who read will be induced to plant in the fall, carefully protecting over winter the plants thus set because they have as yet no adequate means of water transpiration from the roots to sustain winter evaporation; or that at least the plants will be bought in the late fall or winter and planted very early in the spring.

It came about one spring that certain rose plants had to be moved just after there had been rain enough to give the ground a clinging quality. As it shook off the roots, I saw innumerable little white root-hairs, and these I knew were the invaluable and essential feeding mechanisms of the plant. If the soil had been as dry as usual they would have been stripped off when I lifted the plants, but it happened to be just at the consistency that permitted me to see them. I have since acquired an enhanced respect for planting at a time when that vital root movement and functioning can occur where the rose is to grow for me. Once this first crop of root-hairs is stripped off, either through handling from the nurseryman's cellar or otherwise, I believe the plant is nothing but a favorably prepared cutting which must anew make root-growth before it can do anything for the planter.

Now let us presume that the ground has been prepared and that the conditions for either fall or spring planting are favorable. The Receiving Plants plants will come from the nurseryman in a box or bundle, and surely with the roots moist—but not wet—by reason of adequate packing and preparation. The planter needs to open the box or bundle under shelter, to shake off the moss without exposure to wind or sun, and to note whether the tops are in the least shriveled or whether the roots are in the least dry. If either is the case, then the next thing to do is to dig a trench in loose soil and to bury the whole bundle of roses—top, roots and all—leaving it in the ground two to three days, during which time Nature will do much to repair the drying damage.

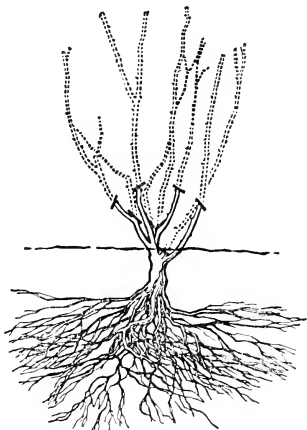
But if the plants are not dried out, what next? If the ground is ready and they are to be planted the same day, the preparation I should recommend is that the various bundles be taken apart, the plants carefully labeled (in shelter and free from exposure as stated), trimmed to not more than three or four buds or eyes above the crown, and then taken a few at a time, in a pail of water, to the rose-bed for planting. It is important that at no time are the roots exposed to the drying wind or sun, wherefore a windy day is not the

right day for planting. Roots belong in the ground, and they are losing value every second they are out of it.

In planting in a thoroughly prepared bed, as I want to presume is to be the case, a spade or

Planting trowel removes the soil to a depth sufficient to spread the roots out carefully over a little mound in the center of the hole so that from the completed level of the bed the crown or root-system of the plant will be at least 2 inches below, as shown in the accompanying diagram, which also shows the proper pruning.

Then the mellowest mixed top-soil is worked around the roots, gently shaking the plant so that the soil settles under and between them. There must be no air-spaces under the roots. After they are covered it is an extra kindness to sprinkle a trowelful of bone-meal over the soil, both in and out of the hole, thereafter filling in and working in this soil around the roots very firmly. The basic idea is to bring fertile soil (but never fresh



Hybrid Tea Rose as properly pruned and planted

manure) in intimate contact with the roots, and to make that contact so definite that when the planting is completed it would be about impossible to pull out the rose. I use my not diminutive feet to tramp firmly around each plant, knowing that the soil cannot be too hard around the roots or too loose on the later cultivated top-soil. A trowel handle end or a blunt stake is useful to make sure of firmness below.

The distance apart will be as the planter has determined, but not less than 18 inches for the average Hybrid Tea, and about 2 feet for the Hybrid Perpetual roses. Some of the Polyanthas can go a little closer, though I would not advise it. My own preference is for "staggered" rows, as by this method there is more open space between plants. Any new rose-beds I make will be 3 feet wide, the plants set in 9 inches from each side, and then 18 inches apart in all directions.

All these suggestions have related to dormant field-grown roses, planted before any growth shows.

Own-Root Roses If use is made of "Springfield" own-root plants, usually much smaller and shipped as they are taken from the pots in which they were probably not dormant but in full growth, the procedure varies somewhat. The plants should be unwrapped carefully, and if

at all dry, the root "balls" should be soaked in water, but not enough to permit any of the soil to get away. Set the plants in the prepared ground, with extra care to surround the undisturbed roots with fine and fertile soil, made very firm. Then give a thorough watering, and shade the plants from sun and wind for two or three days.

If these own-root plants show mildew on the leaves when unwrapped, they should be dusted with "dusting sulphur" (see Chapter IX), and water should be kept from the foliage. If any leaf shows the dreaded "black-spot," the plant had better be destroyed by burning; it is "unclean" in the Biblical sense.

Own-root "one-year" roses may well be planted closer than the field-grown plants, because they are smaller. One correspondent says they do better for him set as close as 8 to 9 inches apart, transplanting every other one the next year.

The Hardy Climbing roses will probably not be planted in prepared beds, but rather along a fence or a wall, near a doorway or trellis, Hardy Climbers or in a special row like grape-vines. Or they may be planted to become the "pillars" I have frequently mentioned. In any case there is need for a pocket of good soil in which to start them. A hole of at least 2½ feet in diameter and

2 feet in depth—more if drainage must be provided—will be right. Chopped-up sod in the bottom, mixed with good manure, is an excellent foundation, but no manure should touch any root.

Spread out the roots, carefully working good top-soil in and around them, and gradually firming it down so that when the hole is full the plant will be about 2 inches deeper than it grew in the nursery, and the soil will be as solid as it can be stamped with the feet.

By all means plant a stake with the rose, unless it is close to its eventual support. The plant needs support for such canes as the preliminary trimming or pruning has left. This trimming, by the way, includes cutting away all the canes on the plant save two or three, or at most four, and the cutting back of the top to not more than 18 inches in height from the ground. If planted in the fall, it is not unlikely that these canes will provide a few blooms the next season, though the real first bloom will not come until the year after. These Hardy Climbers, with few exceptions, bloom only on old wood; the bloom twigs do not start from new wood, but from that of a previous year.

Mr. A. J. Fish, of New Bedford, Mass., is a most successful grower of climbing roses. Here is his method:

The roses are planted 10 feet apart, in rows, and each tied to a stout stake; this is all the support they ever have. By the time the stake has rotted off, they are a tangled row, entwined together, holding themselves up on a level about 5 to 6 feet high. Grown this way, every joint will "break" with flowering shoots, and the branches will have good length stems, while those underneath will send up longer ones that are strong enough to hold up all the flowers.

The Climbing Tea and Hybrid Tea roses require such soil treatment as is usually given the bush forms of the same varieties, and seldom, save in favored California, get more than 10 feet higher. They are therefore best as pillars, or over a low hedge, and it is essential to place and plant them so they may be conveniently laid down for winter protection in most of the Middle States. They may be pruned sharply at planting, inasmuch as their bloom shoots arise from new wood.

The roses designated as "species" or shrub roses, such as *Hugonis*, *Spinosissima*, the *Rugosa* hybrids, etc., need about the same planting treatment as the climbers, including stakes or supports.

All that has preceded is intended to provide for the early, substantial, and steady growth of the roses planted. With good plants and reasonable care, all should live, and begin to "break" into growth when the May suns warm the ground. The Hybrid Teas will often be actually setting

buds within four or five weeks after they have been planted, and if there is any garden pleasure greater than to see this first growth come from the effort of one's own hands, so to speak, it must be that felt when the first bloom bursts open some dewy June morning. Then the reward for loving care comes abundantly, and the heart swells with joy and gratitude to the God of the Outdoors.

But what next? Indeed, I have outrun the season, for I have failed to tell of the weeks following planting. If the ground was at all dry when the plants were placed, a *thorough* watering is desirable. I want to insist that for success in preventing rose prosperity nothing surpasses the casual sprinkler—the one who flirts a hose about, or shakes a few scanty drops from a sprinkling can. Take a lesson from Dame Nature, whose spring rains really wet the ground, with growth jumping thereafter in consequence.

Cultivation is better than watering, most of the time. I suppose cultivation of the ground was first toilfully undertaken by poor old Adam because the weeds began to choke the apple tree Eve made him start outside of Eden, but if he used his eyes and his beginnings of a brain, he soon found that tilling the soil did more than remove the weeds.

To keep the top 2 inches of the rose-beds dusty all the season; to follow each rain and each necessary watering with soil-stirring; to do this without any reference to possible weeds, the appearance of which is a confession of rose inadequacy—these are the items to follow the planting.

Bugs—probably the mean little green lice that know how sweet is rose juice—may appear. Go for them! In Chapter IX is a complete statement of the entomology and the pathology to be considered. But I never wait for nicotine on those first aphids—my garden-hardened right thumb and finger are to the lice as are the Turks to the Armenians—I crush them! Ahead of the general squirting and powdering that must be done, a little missionary work before breakfast sends me to the table in a glow of accomplished virtue!

The tobacco-stem mulch can well go on the ground when growth is well started. The bug chapter tells about it, but I confess here how I hate to cover the clean ground with tobacco, just as I detest powdering the exquisite young leaves, dressed all in their finery of green and ecru, of copper and claret. But I do it, just the same.

There is now available a form of ground tobacco stems which is easily applied, very “nicotinish”

for a while, and seems to carry a real fertilizing value when stirred into the ground.

To keep the roses happily growing after they have started they need easily assimilable food. Their roots may not yet have reached the subterranean lunches prepared for them. Let me quote from a city man whose back-yard rose-garden in Indianapolis is a joy to him and his neighbors. Mr. Nicolas says:

The best prophylactic I have yet found against diseases is to keep the plants growing by frequent applications of liquid manure and a monthly ration of fine bone-meal with a little nitrate of soda. Without this, roses have a tendency to become dormant during the hot summer, the foliage becoming dull and an easy prey to "black-spot."

For liquid manure I have a sixty-gallon barrel in which I put the droppings from the chicken-house, keeping it filled with water. This is almost magic in results. Before applying it, I give the plants a thorough watering, which serves to dilute the manure and to carry it at once to the roots.

Some of us do not have a chicken-house at hand, and we must use other manures. Fresh cow-manure is best for making this liquid food, but stable manure will also answer well. The commercial dried and pulverized sheep manure will make a liquid that has plenty of "authority," to quote the gentleman of color who didn't care for cider until it had acquired the same. Or the "sheep," as we call it for short, may be mixed with

“bone,” short for pulverized bone-meal, about equal parts of each, and spread around the plants, a good trowelful to each, to be later stirred in. At least once a month of this combination brings results, but after the early September dose it is best to stop, so that the growth may ripen for winter. If there is available dry wood-ashes, it may well form a third of the dressing once or twice.

With all this there will be roses, roses galore (whatever that means!) on the Teas, Hybrid Teas and Polyanthas, with maybe an occasional encouraging sample even the first season on the Hybrid Perpetuals and the Hardy Climbers. Now these roses can themselves help to make the plants they are on better as they are properly cut, used in the home, or given to roseless friends.

It always angers me to see a thoughtless person twist off a rose, or break it off. It deserves better than that! Cleanly cut the flowers, and not with a knife unless it is razor sharp; use a scissors or a pruning-shear that will snip off the blooms. And cut with long stems, for that provides the summer pruning, especially for the everblooming roses, which provokes new growth and more flowers. This long-stem cutting also permits the real rose-lover—and no other should touch a rose-plant—

Cutting
Rose-Blooms

to shape and direct the plant, to have it "break" in the way desired.

Some will want to grow rose blooms about which to boast, or for exhibition. "Disbudding" will
Disbudding tend to increase the size as it decreases the quantity of the flowers, and will also provide longer stems. It should be done as soon as the buds are large enough to pinch off between the thumb and finger, all but the one selected to be coddled. I cannot tell about it from experience, for I prefer Nature's profusion.

Now if anyone who has read this book so far as this has bought and planted and matured some roses, has seen them break into growth and bloom into beauty, he can feel that he has begun to experience a great good, a great joy, and he will surely go much further than I have suggested in making his roses grow and bloom. Experience must be personal; I, a rose friend of all America, can only point the way to it.



PLATE XIII.

New Climbing Hybrid Tea Rose, MRS. GEORGE C. THOMAS. Originated
by Capt. George C. Thomas, Jr. (Cl. Mme. Caroline Testout \times
Moonlight.) (See page 34.)

From the "American Rose Annual," by permission of Captain Thomas.

CHAPTER VIII

THE ART AND MYSTERY OF PRUNING

PRUNING is an art, in a sense, and to all too many who need to know about it, it is a mystery. The title of this chapter is in accepted medieval form, for did not the ancient gardeners as well as some old-time printers agree to teach young men "the art and mystery" of their trade?

Rose-pruning is certainly an open mystery to anyone willing to think. Yet I have had to conclude that pruning is done sadly often by random, nearly as often by rule, and all too seldom by reason. For the first method I have no use, and not much more use for the second, especially as exemplified in certain intimate directions which specify for each variety, not for each class, the precise way to prune, altogether by rule. The reasoning way is the only way worth studying.

The Century Dictionary informs us that pruning is "the act of cutting off branches or parts of trees or shrubs with a view to the strengthening of those that remain." I like much better, for rose pur-

poses, at least, the implied definition in Dr. Bailey's remark, in the preface (which is entitled "Why") to the eighteenth edition of "The Pruning Manual," that "The operator who really controls his plant is the one who combines tillage, fertilizing, pruning, breeding, and all the rest, into a harmonious method." That is, pruning is a part, essential to success it is true, of the body of care that makes up rose-growing, but it is only a part, and ineffective in the absence of the other items that make up the "harmonious method."

Anyone who observes roses in various parts of America, and particularly who listens to his rose friends, or reads the generality of rose literature, will agree with Dr. Bailey that "The ideas on pruning are largely notional." It is hoped in these pages to get an understanding of the reasons for pruning, and of the variations in the rose family that make variations in pruning necessary, though all upon the same underlying basis.

What, then, are the reasons for pruning? The dictionary definition above quoted indicates that it is done for the strengthening of the parts of the plant left. This is true, but it is hardly broad enough. Foster-Melliar's "Book of the Rose," an excellent English work, thus covers the objects of pruning: "To maintain

Why We Prune

life and strength equally throughout the plants, to mould and preserve their shape, and to give more vigor, color, and substance to the flowers."

Pruning is, after all, a natural operation. Nature prunes, and prunes severely, but as she is never in a hurry, and does not mind missing a season of bloom, or causing an unkempt general appearance, her work being primarily to reproduce the plant, man has improved on her methods, or adapted them to his quite different aims. Nature's pruning may be seen in an old hedge or a bush rose, where the unchecked growth has shaded some stems until they die, and are thus removed, or "thinned out." The frosts of winter and the gales of any season do much pruning.

Stating yet another aim in pruning, as found in the "Instructions for Pruning" issued by the National Rose Society of England, we read that the idea is "to have healthy, well-formed plants; and from them to obtain either large perfect blooms or many beautiful ones. . . . The art of pruning is the scientific cutting away of those parts of the plant . . . useless for producing the best results, and thus to throw the whole strength of the plant into the most satisfactory shoots."

Thus by several authorities the reasons for pruning are set forth, and in by no means a

“notional” fashion. The practice itself is by the last excellent authority thus divided: “Pruning consists of two distinct operations: (1) Thinning out, which is the complete removal of all dead, weak, misplaced, unripe, or otherwise useless shoots; (2) the shortening of those shoots which are left, to such an extent as to give the best chance of obtaining what is desired.”

The pruning purpose may yet be more closely considered, and the several ideals defined. Again quoting the English society’s manual, we read: “Roses require to be somewhat differently pruned according to the purpose for which they are grown. For instance, shoots must be cut back severely if the plant be required for the production of exhibition roses, but if for ordinary garden decoration the shoots must be left longer; if to form bushes they must be left still longer, and if to clothe pillars, arches, etc., some of the shoots will scarcely require shortening at all.”

With these repeated and emphasized reasons, we may approach the details.

First, it is desirable to discuss the appliances needed. Any old pocket-knife can be used to
Pruning Tools haggle at and abuse a rose plant, but
it is poor business not to have the
simple tools adapted for the work, and to keep

them in good order. A good pocket-knife, or preferably a real pruning-knife with a hooked point on the blade, is proper, if it is really sharp. A moderate-sized pruning-shear, the cutting blade of which has been so ground that it cuts its way, rather than bruises its way, through a rose twig, is essential, and it must be made and kept clean and keen, not only on its cutting edge, but on the holding edge. One can buy a little pocket carborundum "stone" with which to carefully renew and clean these edges. It is right handy also to have a short, narrow-bladed pruning-saw, preferably curved inward like the pruning-knife, with which to saw out heavy *Rugosa* and Climber canes otherwise hard to get at.

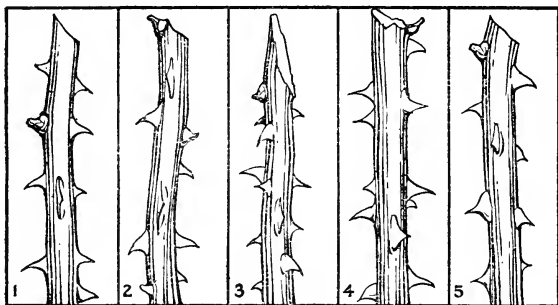
For the middle-aged and rheumatic—there are no old folks in rose relations!—a waterproof kneepad on which to kneel will relieve backs not so flexible as they once were, and permit patient work. Leather gloves with gauntlets are worth having, unless the pruner has a steel-clad skin. Rose-thorns hurt!

Next the way of pruning needs a word. Cutting through, or just below or above a bud, is atrocious; the cut should be made about a
 How and When quarter-inch above the bud that points in the direction from which the pruner

wants the new growth to start, and it should slope parallel to this important bud, not at an angle to it. Under no condition should the cut be so "slouchy" that a strip of rose-bark remains hanging or is snipped away.

When shall we prune?

All roses need pruning before planting (see



Pruning example: 1, too far from a bud; 2, too close to a bud; 3, too much slope; 4, jagged cut, damaged bud; 5, just right.

page 127), and practically all need removal of most of the top, usually to three or four canes, and those left but 4 to 6 inches or three to five "eyes" above ground. At this time the roots also need attention, in the way of cutting off cleanly all broken, torn, or bruised roots, while also reducing the length of those abnormally long and "prongy."

In late fall, the extra-long canes of the bush everblooming roses may well be partly cut back,

to ease the plant from winter wind-whipping, and to ease the rose-worker in his protecting operations. The main and final pruning of these roses ought not to occur until the protection has been removed and the extent to which "Jack Frost" has pruned may be seen.

When the buds begin to swell, and before the first spring dose of fungicides—why waste material on wood to be removed?—is the time to do the real and critical spring pruning of all these ever-bloomers.

The somewhat hardier Hybrid Perpetuals can have earlier pruning, and I have always liked to select and tie down the canes of Frau Karl Druschki, J. B. Clark, and similar roses that I want to arch, in December or January, or whenever I could keep my feet and my fingers from chilling.

The Hardy Climbers should by all means have been mainly pruned soon after flowering, requiring in spring only removal of frozen tips, unnecessary shoots, and those portions that do not need to produce flower-shoots, or that are unsymmetrical to the determined form.

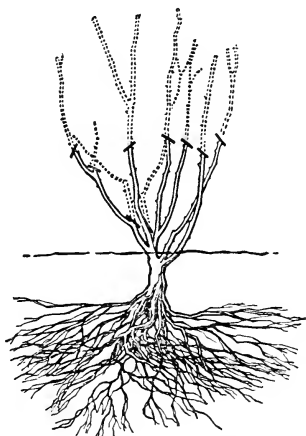
The Rugosas, Moss roses, shrub roses, species, etc., can be treated in early spring or late winter.

With the reasons, the tools, and the time all in mind and in hand, the pruning approaches the

variations in rose classes previously mentioned. There are brutes—or are they just plain fools?—who indifferently slash at all alike, just as did one alleged “gardener” of a great estate who each spring sheared all shrubs to a nice rounded contour, to the destruction of the form differences that are the charm of each in its way, and to the total elimination of all bloom. When his employer “caught on,” the gardener caught “off.”

Consider first the Tea and Hybrid Tea roses, the mainstays of the more or less everblooming class, all of which flower in early summer on new shoots that arise from the root or from remaining old wood. Even though frozen to the ground, these roses will grow and bloom, if the root or the bud is uninjured, but they will flower more profusely and beautifully if they have a framework above ground. Pruning provides and defines that framework, according to the desire, taste, and knowledge of the pruner. It is usually preferable to have the plant reasonably shapely, to have interfering branches removed, to have the new buds “break” in the direction that will retain the preferred shape. This preferred shape ought always to provide for an open plant, alike to improve air-circulation and to give room without interference for bloom development.

It is axiomatic, because pruning stimulates growth, that the weaker growers be cut severely and the stronger growers more moderately ("There's a reason." If on a weak plant all the wood is removed save two or three buds on as many shoots, the whole strength of the root is exerted through those buds. On a stronger plant, the roots can do more, wherefore more buds and shoots are left for them to work through.) Experience will likewise disclose certain preferences or tendencies of individual varieties, and this experience, far better than any I can transfer by printed words, is one of the rewards of rose-growing. The diagram here printed gives less of ideals than ideas, from which can be developed a satisfactory practice, suited to the locality and variety.



Spring pruning of a Hybrid Tea, showing canes shortened and those cut out.

Now note the Polyantha roses, the true ever-bloomers. Of quite different and more compact habit, they are best pruned by first removing the older or interfering shoots at or close to the ground, and then by comparatively slight shortening in

of the top, with some cutting away of interfering twigs. They can thus be kept compact and in good blooming condition.

The Hybrid Perpetual roses make stronger canes, and the rose-worker can choose where he will stop them or how high he will have the plant at blooming-time. These producers of the garden's greatest summer display in size and fragrance of flower bloom on shoots that arise from wood of the previous season, like the grape-vine, and if they are cut to the ground there will be heavy growth but no part in the June bloom festival. As the plants tend to be "leggy" and bare below the bloom level, it is desirable to keep them low—3 feet is better than 4 or 5 for the shearing, though it is hard to hold them down.

In rich ground and with good care, they can be developed into self-supporting standards more pleasing than any tree rose. Mr. David M. Dunning's wonderful 9-foot Frau Karl Druschki at Auburn, New York, is a marvel to beholders.

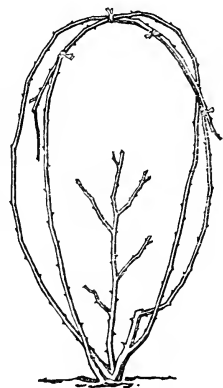
Cutting these roses down to 3 or 4 eyes, together with the removal of all weak shoots, will prepare the plant to produce, with later attention to thinning, fewer but finer and much larger flowers, such as are called "exhibition" blooms.

Constant but not always entire renewal of the

framework of the plant is desirable. Sometimes the cane that did duty this year will serve another year if it is in a position where its removal will leave the plant ill-shaped, and if it has side shoots to provide blooming wood.

Training rather than pruning is involved in the favorite English "pegging-down" practice for certain strong-growing Hybrid Perpetuals. It is intended to avail of the habit of suitable plants of sending up bloom-shoots from every eye when these long and strong canes are bent over and held down—usually by tying the tips to stakes or pegs driven into the ground at the proper places. The canes thus tied down are fixed in as nearly a horizontal position as possible, and all other canes on the plant are cut out. The new shoots that will arise from the roots or bud will serve for next year.

I find more pleasure, even if I get less blooms, in arching together some of these long canes, by tying one to the other so as to give a sort of open balloon shape, or by tying together in an arched form canes from neighboring plants, all at a height of about 4 feet, and all sup-



A Hybrid Perpetual Rose tied to arch form.

ported against gales by strong but inconspicuous stakes driven deeply into the ground. This practice also obviously involves complete removal of unnecessary canes, to throw strength into the shoots used in the scheme. This is pruning for a purpose.

The Rugosa roses need only removal of dead and surplus wood, and such shaping as the pruner may prefer. In a hedge they will do
Rugosas with little pruning, but they will spread and become more unkempt than picturesque, eventually provoking the complete and drastic shearing at the ground previously referred to as a basis of renewal. In England Rugosas are often cut to the ground each spring, the resulting new shoots flowering later, but quite freely. It should be noted that it is a Rugosa character to flower on the wood of the current year.

The Rugosa hybrids, especially Conrad Ferdinand Meyer and Nova Zembla, send up tremendous canes, sometimes growing in a single season to 10 to 12 feet. A satisfactory treatment of these with but little pruning is to arch together these great shoots, supporting them inconspicuously by stakes, as described on page 93. The bloom result is superb. These varieties may also be pruned to a tall bush form.



PLATE XIV. A Harrisburg garden: to show rose-pillars and arch of Lady Gay. (See pages 90 and 151.)

Pruning and the Austrian Brier roses are incompatible, save for cutting out the dead wood and the occasional cautious removal of an old cane that has grown too high to be endured. Otherwise, hands off, or rather, shears off!

Previous mention was made of the desirable practice of hard-heartedly cutting out all or nearly all the canes that have bloomed on Hardy Climbers the Hardy Climbing roses promptly after the flowers have fallen. This permits an annual renewal, and if the strong shoots from or near the roots thus induced are chosen and trained during summer and fall, the plants can constantly improve, and never become unkempt. Prompt action after the bloom is off is most desirable.

Common sense is needed in this summer treatment. Nature provides usually a great abundance of these renewal shoots, and many need removal. This is the opportunity to choose the framework for next year's display, and to avoid vexatious twisting of canes tending in undesired directions. The young growth is soft and flexible, and can, with a little care, be curved to where growth is wanted. I find this training of the young shoots a delightful part of rose work, especially as the soft thorns are not yet so devilish.

The use of the Hardy Climbing sorts as pillars

rests upon suitable pruning. As previously proposed, the height of the pillar may be whatever the trainer desires, within the habit of the variety used. Some very lovely climbers that are not of sufficiently rampant growth to easily cover a large space with their framework shoots are particularly suitable for pillars. Aviateur Bleriot, Leuchtstern, Paul's Scarlet Climber, Dr. Huey, Purity, Christine Wright, Purple East, as well as many others, do well with this easy treatment.

Pruning
for Pillars

The supporting post, preferably of iron pipe for permanence, is best planted with the rose, though it may be driven in, with the use of much care, later. I have sometimes, when I did not have a pipe-post ready, planted a wooden stake, which, holding the place, readily can be removed so as to substitute later the permanent metal support.

The shoots selected, say three or four for the first year, are kept tied in toward the post, and are cut off a little beyond the top of it, leaving the final attention to be given in the spring, after frost-time. If lateral shoots have developed from these sturdy uprights, they are shortened in the spring to whatever is the determined limit of the pillar, usually from 6 to 12 inches. It is from

these laterals principally that the blooming shoots will spring.

After blooming, the old shoots are all to be cut off at the ground, though in order to maintain a certain neatness it may be desirable to do this half at one time and half at another. Meanwhile, the young shoots from the root that are to make the plant for the next year can be selected and tied in, the shoots not required being removed. As the pillar strengthens, more shoots may be used, always with remembrance of wind-pressure that may, if the pillar is made too heavy, cause disaster.

These pillar details, first mentioned in Chapter V, are here repeated because I wish to emphasize the desirability of the form, susceptible as it is to many variations, and capable of providing delightful results. (See illustration of the bare pillar on page 76, and of the blooming plant on page 89. There is likewise a showing of a good pillar display on Plate XIV, facing page 148.)

The pruning of the species roses, of the Hybrid Sweetbriers, of the Scotch roses, of all the strong-growing classes that flower on last year's wood, is best described by the direction one finds in Mr. Pemberton's "Roses," where the description of such shrub and border

sorts is followed by the hieroglyphic, "P. none." Yet this is not quite exact, for it overlooks the necessary occasional removal of old shoots, which Nature will remove by shading if the neater method of the pruning-shear is not used. All these forms, too, may require restraint lest they spread out from the root too far, and that in a fashion is also pruning. It must be emphatically noted, however, that all this pruning is at the base only, and not at the ends of the shoots. To crop or shorten such roses is an atrocious practice, not merely destructive of the shape and habit of the plant for which they should have been placed, but in most cases removing the possibility, if done in the spring, of any flowers for that year.

I have previously in this volume referred to the fact that the three or four main garden rose classes—the Tea, Hybrid Tea, Hybrid
Good-looking Shrubs Perpetual, and Pernetiana classes—are not good-looking shrubs when out of bloom. The roses just mentioned, with the exception of the Austrian Briers, do not fall under this criticism, for they are good-looking shrubs, each with its own individuality in shape as well as in foliage and flower. The upright quality of *Rosa multiflora*, the broad and fine mass of the Hybrid Sweetbriers, the graceful loveliness of *Hugonis* and

its sisters, the low, smooth, and rounded contour of the *Spinosissima* group, the outstanding beauty of the tall *Setipoda*—all these are characters to be desired and admired, and the vandal who prunes them to his ideals of shape and outline, apart from necessary and protective renewal that merely anticipates Nature's pruning, ought to have his ears sheared to some pattern of punishment prepared as the proper marking for fools!

It was once said by an outraged observer who witnessed the way in which one of these gentry had mutilated a fine elm to his notion of what it ought to be, that "It takes a hardy man to show God Almighty how He ought to shape a tree!" So with these valuable members of the rose family—it is impious to distort or to shear them thoughtlessly, or upon ideals not formed upon a knowledge of them. It is one of the delights of the great Arnold Arboretum, near Boston, that roses and other shrubs are encouraged to show their natural habit.

What of secondary pruning, during the summer? The answer is that it is of only secondary importance to the determining earlier pruning, and that, especially with the Teas and Hybrid Teas, it has much to do with recurrent bloom periods.

The first aspect of this summer pruning is tied in with the use of roses. Left on the bush to maturity, a fine rose extracts the utmost from the plant that bore it, unless it has been fertilized and seed production is permitted to go on, when an even greater demand is made. The plant is inclined and has a right to rest after this supreme effort, and it usually does so.

But if the lovely rose be properly removed from the plant in its early unfolding stage, it may hold its beauty longer indoors, or it may serve, well bestowed, as "God's love-letter" to someone. In either case, if it has been cut from the plant with care and thoughtful intent, and with a liberal stem, the plant is stimulated to new growth, which usually means new bloom. Then, too, this thoughtful cutting can constantly maintain the compactness and symmetry of the plant, for it is the most effective form of summer pruning. It is quite true that to keep the blooms on the plant is to have less of them, while to freely cut and freely bestow is to secure the blessing of more abundant flowers. As with the lowly and lovely pansy, the more one gives away the more one has!

The Hybrid Perpetual roses are not seldom caused to prepare for recurrent bloom, and particularly for fall bloom, by removal of flowers and

by even more extended summer pruning, accompanied by not only thorough tillage but the feeding of the plants. Do they not deserve it, after the June outburst of bloom?

The wise rose-grower will in consequence keep his pruning-shears at hand as he lovingly tends his roses in summer. Sometimes a "blind" shoot appears, being one without buds. Nip it at the end; it may get busy in sending out side shoots that bloom.

Watchful summer pruning will take care of "suckers" that spring up from the wild roots of budded plants. They can usually be detected by the difference in color and in number of leaflets, and by the fact that they obviously come from below the real plant. Suckers should be cut off underground with a sharp knife as soon as seen. Their presence is as much evidence of poor garden-keeping as a cobweb in the front hall is evidence of slack housekeeping.

All I have written upon pruning will be worthless if I have failed to emphasize and impress the need for using it as a part of the "harmonious method" by which the observant grower "really controls his plant," in the wise words of Dr. Bailey. He does this, not because he is working upon a blue-print, like the machinist, but because

he observes as well as reads, and thinks as well as feels. This is the garden "fun" that beats any golf game that ever happened!

If the rose-grower thus uses both love and intelligence, he will come to have a body of knowledge relating to his roses that enlarges with his experience. He will control his plants, because he knows them and loves them. He will then prune with reasonable assurance, and the flowers that follow will be his constant check upon his "harmonious method," and his reward as well.



PLATE XV. *ROSA MULTIFLORA CATHAYENSIS*, in the Author's garden. (The original form of the CRIMSON RAMBLER.) "Large light pink flowers . . . with the airiness and grace of butterflies." (See page 51.)

CHAPTER IX

PROTECTING ROSES FROM INSECTS AND DISEASES

THE reader is urged by all means thoroughly to absorb the idea of *protecting* his roses from the bugs and bothers that beset them. Most of us prefer to be adequately protected against the occurrence of a conflagration that injures the home, even though we pay much for insurance to indemnify us in case of loss.

The whole spirit of this chapter is, therefore, to *protect* our rose plants from injury, rather than to propose remedies for damage done.

I do not want any reader to be deterred from rose-growing by the awesome names of the insects and diseases discussed. The whole caboodle of them can be easily controlled, as the details will show, by a little *timely* care.

The best possible protection against most rose troubles is good health. If the plants are in full vigor, growing freely, if the ground in which they are thus growing is kept well fertilized and with its surface thoroughly cultivated, at least fifty

per cent protection is assured. (I do not mention weeds, for weeds in a rose-garden are at once a signal of inexcusable neglect.)

This protection by nurture carries not only its own considerable immunity but its own abundant reward, in the bloom for which the roses are preferred. It is again a case of that love which delights in service to its object. That most charming of all writers on the rose, Dean Hole, waxes indignant as he describes the neglect he found in a pretentious but neglected rose-garden which he designates as "a dismal slaughter-house." To the vain woman who bewails the "trouble and expense" she has incurred, he retorts: "You have taken no trouble which deserves the name; and as to expense, permit me to observe that your fifty rose plants did not cost you a fifth of the sum which you paid for your sealskin jacket. You don't deserve beautiful roses, and you won't have any until you love them more."

Yet with the full fifty per cent immunity provided through loving care there must be joined definite but not difficult safeguards. Fortunately there is a combination advantage in certain of these protective means, and one may hit "two birds with one stone," according to a bad proverb, for who wants to hit any bird with any stone?

Prophylactic measures begin before the leaves appear in spring. Indeed they ought to begin the summer and autumn before, in removal and burning (not disposal with rubbish that can rot) of all diseased leaves, and in treatment with the black-spot dope, the same treatment being repeated in spring just before the buds swell.

If roses are healthy and happy, they will go through most of the first bloom period in the cultural immunity I have referred to. The first safeguard to apply during the growing season may easily be a double one, for it will as well check the start of weeds as that of the green or pink "lice" that are officially "rose aphids." A mulch of 3 inches of tobacco-stems, the refuse from cigar-making usually obtainable at little cost, will keep away the aphids and the weeds, and will preserve soil-moisture. It will be effective for at least six weeks, and should be applied just before the first blooms open, and over ground that has been pulverized to dustiness. As noted in a previous chapter, there is actual fertilizing value in these stems. The ground-up form, now in commerce at about 3 cents per pound, is easier to use, neater, and is best applied in successive applications of about one-fourth inch at a time, all to be eventually worked into the ground.

But it will be best to quote details as to the insects we must combat, or "control," as the entomologist puts it, from the complete story by Prof. C. R. Crosby, of "Insects that Hunt the Rose," in the 1922 "American Rose Annual."

(The lazy reader may now skip to page 172 for one controlling "dope"! The details that follow are for those who prefer to work intelligently).

THE ROSE APHID (*Macrosiphum rosæ* Linnæus) is widely distributed throughout the world. It infests roses both in the open and in the greenhouse. In the colder parts of the country the plant-lice pass the winter in the form of small, black, shining, oval eggs which are attached to the bark near the buds. In the South, where the winters are mild, no eggs are deposited and breeding continues throughout the year. The winter-eggs hatch with the opening of the buds in the spring and the young lice become mature in from ten days to two weeks. They are all females and begin to give birth to living young at the rate of about four to six a day. The winged forms are able to fly to other plants less badly infested and there find more abundant food.

The lice reproduce with great rapidity and soon cover all the tender parts of the plant. They feed by sucking out the plant juices.

THE SMALL GREEN ROSE APHID (*Myzus rosarum* Walker) often infests roses. It is a more serious pest in greenhouses than where the plants are grown in the open. In many parts of California it is the most serious insect with which rose-growers have to contend. All the individuals are green—there is no reddish form.

THE PINK AND GREEN POTATO APHID (*Macrosiphum solanifoliae* Ashmead) is better known as a pest on potatoes, spinach, and kale. Recent experiments have shown that it is an important factor in the transmission of the mosaic disease of potatoes and spinach. In the cooler parts of the country the insect passes the winter in the egg stage on the rose and several generations may develop on the rose.

CONTROL.—Many of the lice may be dislodged with a stiff stream from the garden hose. In many cases this is the most practicable way of controlling the pest, especially in small gardens. Good results may also be obtained by using nicotine sulphate ["Black-leaf 40"], (containing 40 per cent nicotine) at the rate of one part in eight hundred parts of water, to which should be added a small amount of soap to make the liquid stick and spread better. Where only a small quantity is needed, put one teaspoonful of the nicotine sulphate in two gallons of water, adding about one ounce of soap. Either whale-oil soap or common laundry soap may be used. If the nicotine preparation is not at hand, whale-oil soap or any other good soap, in the proportion of one pound in eight to ten gallons of water, may be used. The spraying should be done with great thoroughness, care being taken to wet all the lice. As it is a difficult matter to wet those on the buds and the tips of the branches, it is a good plan to dip the tips into a dish containing a quantity of the liquid. The aphid may be killed indoors by fumigation with tobacco. Care should be taken not to injure the more tender plants. Tobacco powder may be also dusted on the plants while they are wet with dew.

THE AMERICAN ROSE-SLUG (*Endelomyia rosæ* Harris) is a native American insect and is widely distributed through-

out the eastern United States, but is more
Three Mean
Rose-Slugs abundant in the northern part of its range.

The parent four-winged flies are black and about one-fifth inch long. They appear on the rose bushes soon after the leaves open and may be found until the bushes are in full leaf. The female is provided with a sharp ovipositor with which she inserts her eggs into the tissue of the leaf between the upper and lower epidermis. The eggs hatch in ten days to two weeks, and the young slugs that do the damage feed mostly at night, skeletonizing the upper surface of the leaves. The slugs are at first greenish, but later become opaque yellowish. They become full grown in two to three

weeks. When mature the slug descends to the ground and there at the depth of an inch or more constructs a cocoon in which to winter. There is only one brood annually.

THE BRISTLY ROSE-SLUG (*Cladius pectinicornis* Fourcroy) is widely distributed throughout the eastern United States, but is more injurious southward. The parent insect is a four-winged black fly, a little longer than the species previously mentioned. The flies appear about the time the roses are coming into leaf, and the female inserts her small, white, rounded eggs into the upper surface of the leaf petiole. The eggs hatch in seven to ten days. At first the slugs merely skeletonize the leaves, but when older they eat out large irregular holes in the edge of the leaf. When mature the larva is about three-fifths inch in length, yellowish or green in color, and the whole surface is more or less bristly. The larvæ grow rapidly. There are three generations annually in the North, and possibly four in the South. The winter cocoons are made among fallen leaves.

THE COILED ROSE-SLUG (*Emphytus cinctus* Linnæus) can be distinguished from the two preceding by its larger size, and by having a wide band across the middle of the abdomen. The females appear soon after the leaves unfold and deposit their eggs singly on the under side of the leaves. The larvæ devour the entire substance of the leaves, feeding along the edge with the tip of the body coiled beneath it. The mature larva is about three-fourths inch in length; the upper surface is metallic green, spotted with white. When fully grown, the slug deserts the leaves and bores into the pith of a dead rose branch or some other nearby plant where the pupal stage is passed. There are two broods annually.

CONTROL.—A strong stream of water from the hose if applied every few days is effective in ridding the bushes of these pests. The slugs may also be killed by application of arsenicals. (The black-spot-mildew dusting described on page 172 will take care of them.) Hellebore is also an effective insecticide, and may be used at the rate of one ounce in two to three gallons

of water, or dusted on the foliage dry when diluted with double its weight of powdered plaster or cheap flour. Tobacco extract (nicotine sulphate, or "Black-leaf 40") as recommended for the control of the rose aphid will also be found effective against the slugs, as will tobacco dust.

THE ROSE LEAF-HOPPER (*Typhlocyba rosæ* Linnæus) often injures to a considerable extent the leaves of rose bushes.

A White Pest It is a small, nearly white, leaf-hopper which feeds on the under side of the leaves. The leaves become yellowish, and if the infestation is severe they often turn brown and die. The young leaf-hoppers hatch in the spring from eggs inserted in the bark on rose bushes and mature in June and July. Most of them then migrate to other plants where a summer generation is produced, to continue the annoying round.

CONTROL.—The rose leaf-hopper may be controlled by spraying with tobacco extract as suggested for the control of rose aphid. In spraying be sure to hit the under side of the leaves.

THE ROSE LEAF-ROLLER (*Archips rosaceana* Harris) is widely distributed throughout the United States, and attacks roses both in greenhouses and out-of-doors.

The Leaf-Roller The black-headed olive-green caterpillars feed on the leaves and blossoms, which they roll and web together with fine silken threads. They become full grown in about a month and pupate within the rolled leaves. The light brownish moths with banded wings emerge in two or three weeks and deposit their eggs in masses on the leaves. On roses grown in the open there are two broods annually of the annoying insect.

CONTROL.—This pest may be controlled by spraying with arsenate of lead, one ounce to one and one-half gallons of water, or by the sulphur-arsenate mixture recommended for black-spot and mildew, provided that the applications be made early, before the plants become so large as to make it difficult to cover all the foliage with the poison. Spraying should always be supplemented by hand-picking. Careful watch should be kept for any indication of injury, and when found the caterpillars should be crushed or destroyed in some other way.

THE ROSE-CHAFER, ROSE-BUG, OR JUNE-BUG (*Macrodactylus subspinosus* Fabricius) is a well-known beetle and a serious enemy of roses. It is generally distributed throughout the eastern United States and is most troublesome in sandy regions, especially where waste grass lands abound. The adult beetle is about one-half inch in length, grayish brown in color, with long ungainly legs. The beetles emerge from hibernation about the end of May or middle of June and feed in great numbers on the blossoms and leaves of rose bushes, often entirely destroying the bloom. After feeding for some time the female flies to nearby grass lands, burrows into the ground to the depth of 3 to 6 inches, and there deposits her smooth, white, oval eggs, singly in little pockets in the soil. The female normally oviposits three times, and about twelve eggs are laid at each oviposition. In New York most of the eggs are laid during the last week in June and the first half of July. Sandy soils are selected for oviposition; the heavier soils are rarely infested. The eggs hatch in two to three weeks. At first the grubs feed on decaying vegetable matter but later they attack the roots of grasses. By November the larvæ become mature. At this time they resemble the common white grub, but are only about four-fifths inch in length. When full grown they descend to the depth of about a foot and spend the winter curled up in oval earthen cells. In the spring they come nearer the surface and may resume feeding for a short time. In New York most of the grubs transform about the last of May or first of June to pupæ in earthen cells 3 to 6 inches beneath the surface. The beetles emerge three to four weeks later and fly to vineyards, rose-gardens, or other places.

CONTROL.—This insect is bad! Apparently the beetles do not relish foliage which has been coated with arsenate of lead alone. If, however, cheap molasses or glucose is mixed with the poison the beetles will eat it readily and many are killed within twenty-four hours. When the beetles are very abundant, however, much damage will be done before they suc-

cumb to the effects of the poison. Hand-picking the beetles into pans containing a little kerosene will greatly reduce their numbers. This must be repeated at short intervals as long as the beetles continue to come.

Many rose-growers have reported successful results in the control of rose-chafers by the use of a proprietary insecticide known as "Melrosine," if used often enough to catch the successive "crops" of the brood; that is, they must be hit every day for usually a week.

THE ROSE SCALE (*Aulacaspis rosæ* Bouché) occurs wherever roses are grown. The larger female scales are about one-tenth inch in diameter, snow-white in color. The male scales are also white but shorter and narrower with three longitudinal ribs. The scales are more abundant in damp situations. Rose bushes are sometimes so badly infested that the stems have the appearance of being whitewashed. In such cases the plants are weakened, growth is retarded, and the flowers are starved. The rose scale apparently hibernates in all stages from egg to adult.

CONTROL.—A thorough application of lime-sulphur solution at the rate of one gallon of the commercial preparation testing 32° Baume in eight gallons of water, or one to eight in any quantity, applied in the winter or early spring, will be found effective in controlling this scale. In addition to the above treatment it may be advisable to cut off and burn the worst infested stems.

THE ROSE CURCULIO (*Rhynchites bicolor* Fabricius) is a bright red snout-beetle with black legs and snout, about one-fourth inch in length, and is widely distributed throughout the United States. In the northern states the beetles appear on the rose bushes early in June. In feeding, the beetle eats holes with its beak into the unopened buds and fruit and also punctures the flower-stems. The leaves are also attacked. Some of the injured buds fail to open, while those that do expand often have the petals riddled with holes. The light yellowish white, oval eggs are deposited in holes made in the buds and young fruits. They hatch in a week or ten days and the white legless grubs feed on the seeds until full grown. In late summer the full-grown larvæ desert the fruits and descend

to the ground where they soon change to pupæ and hibernate in this condition. There is but one brood annually.

CONTROL.—In the flower-garden, persistent hand-picking the beetles into a pan containing a little kerosene oil will be found an efficient means of control. In larger plantings it may sometimes be found necessary to resort to arsenical sprays. Arsenate of lead, one ounce to one and one-half gallons, should be applied at the first appearance of the beetles.

THE ROSE SLUG-CATERPILLAR (*Euclea indetermina* Boisduval) has in recent years slightly injured roses in the Southern States. It is a caterpillar of striking appearance, orange in color and covered with tufts of spines. The eggs from which these caterpillars hatch are laid in July, singly or in small groups, slightly overlapping each other. They hatch in about nine days, and the young caterpillars feed on the leaves, remaining on the under side. In September the caterpillars become full grown.

CONTROL.—If but a few bushes are attacked, hand-picking the caterpillars is best control of this insect. Care should be taken, however, to wear a glove during this process, as an irritating fluid is secreted at the base of the spines. If a large number of bushes are attacked, the caterpillars may be killed when young by a thorough application of arsenate of lead, two pounds in fifty gallons of water, or one ounce to one and a half gallons.

THE ROSE MIDGE (*Neocerata rhodophaga* Coquillet), FULLER'S ROSE BEETLE (*Aramigus fulleri* Horn), and the STRAWBERRY ROOT-WORM BEETLE (*Paria canella* Fabricius), are insect pests in greenhouses, which is not essential here to describe. THE ROSE-SEED CHALCIS-FLIES (*Megastigmus aculeatus* Swederus and *M. nigrovariegatus* Ashmead) infest rose hips, but do no damage to the plants.

Not only insects bother roses in the United States, but two diseases are troublesome. It is these to which attention is now given in a very definite way, with the statement that they can be controlled, and usually in

such a fashion that the control of the diseases will also act either to greatly minify or entirely prevent the assaults of several of the insects previously described.

(Here again the scared or indolent reader may omit the gruesome details and jump to the easy control methods outlined on page 172.)

Powdery mildew and black-spot of roses are the two chief interferences with successful rose culture in the United States. The former—mildew—is *on* the rose foliage; the latter—black-spot—is *in* the rose foliage. The importance of this distinction will appear as we investigate the subject.

Dr. L. M. Massey, a plant pathologist of Cornell University, at Ithaca, New York, has paid particular attention to rose diseases, and it is from his findings as published in the 1922 "American Rose Annual" that quotations are made.

Powdery mildew is one of the most common and injurious diseases of the rose, especially of plants grown under glass.

Mildew Outdoor plants are commonly attacked, the Crimson Rambler and related forms being especially susceptible. Varieties differ greatly in susceptibility. Ramblers and other climbers which are said to be subject to mildew will be found to suffer less severely from the disease when grown away from walls so that they have free air-exposure. This is explained on the basis of moisture relations, the air drying the plants quickly. Fungous spores, like seeds of higher plants, require moisture to germinate.

The first signs of the disease are grayish or whitish spots on the young leaves and shoots. Frequently, the unopened buds are white with mildew before the leaves are affected to any great extent. These spots quickly enlarge, a felt-like coating of a white, powdery appearance being commonly found on the stems and thorns. Later the mildew is less conspicuous or entirely lost, the affected areas turning black.

Dwarfing, curling, and various deformations of young leaves, stems, and buds occur. Injured leaves may fall, and the leaf surface of the plant be thus greatly reduced. Growth and flower production are materially interfered with, young buds being frequently rendered entirely worthless.

Powdery mildew of roses is caused by the fungus *Sphaerotheca pannosa* (Wallr.). Lév. var. *rosæ* Wor. Under the microscope the white patches on the rose plant are seen to consist of a mold-like growth (mycelium) composed of slender white threads with numerous branches in a network. At various points, upright branches are developed which bear chains of egg-shaped spores. These spores are easily detached and lie in masses, giving the older spots a powdery appearance.

When mature, these summer spores are blown about by the slightest currents of air. They are thus carried to other leaves, where, under proper conditions of temperature and moisture, they germinate, and produce other spots of mildew.

It is important to note that the greater portion of the mycelium is on the *outside* of the leaf. In the case of black-spot the mycelium is *within* the leaf.

The summer spores are short-lived. However, another spore form develops to carry the fungus over long periods unfavorable to the growth of the mildew. Somewhat rarely, and chiefly outdoors, the winter spores are produced in little sacs within minute dark fruiting bodies embedded in the felt-like mycelium on stems and thorns. These spores can live over winter outdoors, to start trouble in spring.

There are, then, two, and possibly three, sources of primary infection in the spring. Winter spores are disseminated by the wind, rain, man, and other agents, and, under proper conditions of temperature, moisture, and position, germinate and produce infection. The second source of inoculum for roses in the open is the distribution of the summer spores formed throughout the year on roses under glass. These spores are very light and might readily be carried by the wind for great distances. Growers frequently buy pot-grown roses in the spring to plant in their gardens. Some of these plants may be affected and often the fungus spreads quickly to other bushes. The third possible source of inoculum is the production of spores by mycelium which has wintered over on plants in the open.

CONTROL.—Mildew yields to any sulphur application, and may be controlled by dusting with the “dusting sulphur” hereafter mentioned. Its control is accomplished at the same time as the prevention of black-spot.

Black-spot of roses is caused by the fungus *Diplocarpon rosæ* Wolf, long known under the name of *Actinonema rosæ* (Lib.) Fries.

Black-Spot It is undoubtedly the most common and destructive disease bothering outdoor roses in America. As previously stated, it exists *within* the body of the leaf, and not merely *on* the leaf as is the case with powdery mildew. This means that the mildew can actually be removed, whereas the black-spot itself removes the leaves, defoliating the plant and stopping its functioning until new leaves are made. These new leaves then are promptly susceptible to the ever-present spores of black-spot, and the disagreeable round is repeated.

Concerning black-spot Dr. Massey gives the following precise details:

Black-spot may be recognized by the black spots on leaves and petioles, by the leaves yellowing, and by premature defoliation. The more or less circular black spots may reach a diameter of a half-inch or more, and have irregularly fringed margins. They appear in late spring or early summer, and only on the upper surface of the leaves. During late summer and the autumn when cool nights and heavy dews prevail, the disease increases and frequently becomes epidemic.

The parasitic plant that causes black-spot is microscopic and attacks roses only. It lives over the winter in dead leaves, either on the ground or clinging to the plant. During the winter and early spring one of the two spore-forms of the fungus is developed. These winter spores, which serve to reproduce the fungus and which correspond to seeds of our higher plants, are produced in minute protected sacs. In the spring when the rose plant is putting out its leaves, the spores of the parasite are matured. They ooze out of the structures within which they are produced and are carried to the leaves. The agents involved in transferring the spores and thus inoculating the plants are wind and splashing rain.

The spores on the leaves germinate by the production of minute germ-tubes which penetrate the cuticle, or outer covering of the leaf. Beneath the cuticle, where it is beyond harm from outside influences (including fungicides), the germ-tube develops into a thread-like structure, called mycelium, which is the vegetative structure of the parasite.

The mycelium within the leaf continues to live throughout the summer and winter. Within about fifteen days after the first infections of the season have taken place, there arise from the mycelium many thousands of secondary or summer spores. These spores are disseminated by the wind, and are

doubtless carried long distances. On the surface of rose leaves to which they may be carried, they germinate, under moist conditions, within a few hours. Each spore may produce another spot, and fifteen days later another crop of summer spores is matured and ready for dissemination.

When the diseased leaves fall from the plant, prematurely or normally, the fungus does not die, but continues to live throughout the winter in the dead and decaying tissues. With the arrival of warm weather, which pushes the leaf-buds into renewed activity, the winter spores are mature. Thus the life-cycle of the fungus is complete.

Many pages might be filled with statements as to the various processes and agents used in attempting to control effectively this hateful disease. I set down here Dr. Massey's clear statement that:

Black-spot is controllable, and by means not so complicated nor objectionable but that the average rosarian may and will apply them. . . . Black-spot control should be looked upon as a major operation in rose culture, for the problem is worthy of one's best efforts. . . . The recommendations for control must be closely followed, for one must realize that the delay of a few hours in the application of a fungicide may mean the difference between success and failure.

Here is again pointed out the desirability of protection or prevention rather than a futile attempt at cure. Black-spot cannot be cured, for when the leaves are afflicted with it they are virtually dead, save for their power to drop and furnish further infection for new leaves.

As before suggested, *the control methods will also completely control powdery mildew*, and they will be effective against the various rose-slugs.

From Dr. Massey's complete discussion of control through sanitation and protection the essential data are herewith condensed:

CONTROL.—It is distinctly desirable to rake up and burn all the old leaves on the ground, and constantly to pick up and remove any leaves affected during the summer. This method of control will not be sufficient, however, because of the pervading character of the fungus.

The one measure that has been successful in the control of black-spot is that of covering the leaf with some fungicide that will prevent the spore of the fungus from penetrating the cuticle or skin of the leaf. Bordeaux mixture applied before the disease is in evidence will accomplish this result, but it seriously discolours the foliage.

A finely ground mixture of ninety parts sulphur and ten parts lead arsenate has proved as efficient as bordeaux and has not greatly discoloured the foliage. It has been found that dry chemicals, so finely ground as to be dust, are much easier to handle and apply than a liquid fungicide.

This dust can be obtained of up-to-date seedsmen, there being several manufacturers who have specialized in the particularly fine grinding necessary to produce dust. The ordinary commercial flowers of sulphur is not useful.

Dr. Massey suggests also that to make the effort trebly effective the mixture of nine parts dusting sulphur and one part lead arsenate dust may have added to it one part additional of tobacco dust, so that at the

A Treble Result

same application control will be undertaken of black-spot, mildew, aphids and other sucking insects.

For this dusting application some form of dust-gun is desirable. A very simple but effective instrument for the purpose is sold at \$1, and may be had of most seedsmen.* Dr. Massey continues:

Beginning the latter part of May in the climate of central New York, from seven to twelve applications will be necessary to provide adequate protection throughout the summer. As soon as the first leaves are well out, they should receive a protective coating of fungicide. This will prevent the winter spores from infecting the leaves. While it is not true in this case that "an ounce of prevention is worth a pound of cure," because it is impossible to cure a black-spotted leaf, it is true that an ounce of fungicide used in a timely application early in the season may be worth a pound of the same material used at a later date. *Promptness and thoroughness are essential.* The mixed dust should be applied early in the morning while the foliage is wet with dew. It is better to apply it before a rain rather than after, because it is during the rainy periods that the conditions are best provided for infection.

Other methods of black-spot control were mentioned in the exhaustive article printed in the 1922

"American Rose Annual." A well-known rose-grower near Philadelphia,

Other Black-Spot
Controls

Mr. E. M. Rosenbluth, has been successful. His method of protection is to depend on the use of ammoniacal copper-carbonate solu-

*The Corona Chemical Division, Milwaukee, Wis., devised this effective "gun" and also produces the chemicals required.

tion,* which is also effective against mildew. In the latitude of Philadelphia spraying should begin about May 5 with a very light application, and be continued once a week until after the main blooming period, when early in July he recommends the use of bordeaux mixture, notwithstanding its tendency to discolor the foliage, returning to the ammoniacal copper-carbonate in the fall when blooms begin again to show. He uses a spreader of soap solution with the copper-carbonate spray, in the proportion of one quart of soap solution to every two gallons of spray. The soap solution is made by cutting up a bar of any good laundry soap or Ivory soap into two quarts of hot water, which is then boiled until the soap is thoroughly dissolved, after which enough water is added to make two gallons of completed soap solution.

Yet another and even simpler control method has been proposed by Mr. B. G. Pratt, a manufacturing chemist, who is also a rose-lover. He recommends the use of "Scalecide" on the dormant

*Mr. Rosenbluth's formula for the copper-carbonate is as follows, insistence being placed on the use of chemically pure copper carbonate:

To make the ammoniacal carbonate of copper solution, proceed as follows: Take 5 gallons of water, $\frac{1}{2}$ ounce of copper carbonate (chemically pure) and $4\frac{1}{2}$ ounces of ammonia water, 16° or 10 per cent. The ammonia is diluted with seven or eight parts of water, and a paste is made of the copper carbonate with a little water. Add the paste to the diluted ammonia and stir until dissolved. Enough water is added to make 5 gallons. This mixture loses strength on standing and should be made as required.

rose bushes, and of "Sulfocide" after the leaves are out. His method is as follows, and several careful amateurs have testified as to its efficacy:

Just as the leaf-buds begin to swell, I spray the bushes thoroughly with "Scalecide," diluted one part to fifteen parts of water, and spray the ground around the bushes as well. Select a clear day, not colder than 40° Fahr.

When the foliage comes out and the first bloom buds begin to develop, I watch for green aphid and then spray thoroughly with "Sulfocide," soap, and nicotine sulphate ("Black-leaf 40") in the following proportions: one tablespoonful of "Sulfocide," one tablespoonful of laundry soap (melted in hot water), and one teaspoonful of "Black-leaf 40" to three quarts of water. A more exact formula is two fluid ounces of "Sulfocide," two ounces of soap, and three teaspoonfuls of "Black-leaf 40" to a three-gallon spray-tank. I repeat this spray every ten days to two weeks all the summer.

Always see that there is no arsenate of lead or bordeaux in your sprayer. The spray I have mentioned will not leave any marking on the foliage or flowers in bud if you take the trouble to shake off any drops. This spraying programme also takes care of mildew, aphid, and leaf-hopper.*

In my own home-garden I have found the lead-arsenate application to be quite satisfactory and practicable, *when I have used it in time*. It does not amount to much after black-spot has appeared, which again leads me to promise for myself and hope for my reader-friends that we will all protect our roses *before* they are hurt.

*"Sulfocide" and "Scalecide" can be obtained of seedsmen.

Let me set down here in concluding this chapter, the essence of the whole situation:

All insects that now attack the rose outdoors in America can be either prevented or destroyed (even including the hateful rose-bug) by the simple applications above proposed.

The two dangerous fungous diseases—powdery mildew and black-spot—can be prevented from appearing if the rose-grower will be prompt enough and hard-hearted enough to apply the treatments above suggested at the time when he likes least to do it, which is just when the young foliage has begun to reach its size, and before the buds have begun to show color.

There is just one other precautionary item that I feel in duty bound to note. If a rose is particularly susceptible to mildew or to black-spot, it had better either be isolated where it can have special treatment, like humans who have infectious diseases, or frankly destroyed. Thus I would eliminate Crimson Rambler, planting the much better Excelsa in its place. The susceptible Pernetianas may well be grouped, as their color relations also suggest, all in one bed, over which particular watch can be kept and to which the applications above recommended can be applied with even greater assiduity.

Remember, too, that clean culture, and continued attention to protecting the roses from bugs and bothers undoubtedly tends to diminish their liability to infection and damage. Thus virtue is its own reward!

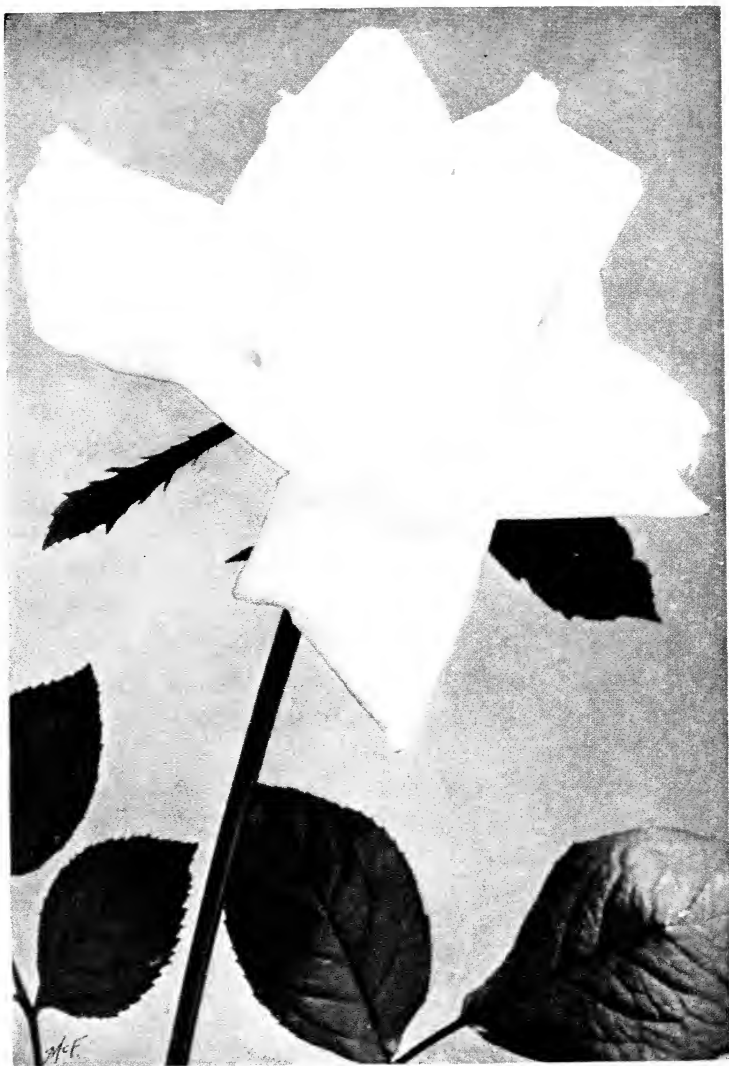


PLATE XVI. GLORIFIED LA FRANCE, a Hybrid Tea rose originated by John Cook. (Mrs. Charles E. Russell \times Frau Karl Druschki.)
(See page 203.)

From the "American Rose Annual," by permission.

CHAPTER X

WINTERING ROSES ANYWHERE

A BLOCK of ice exposed to the air at zero temperature will gradually waste away by evaporation. Every plump twig and green leaf on a live rose-bush is giving off water all the time. While the frosts of winter may remove the leaves, the twigs keep on slowly evaporating the moisture that the roots keep on slowly sending up. If the roots stop the water-works, the twig shrivels and eventually dies.

Evaporation is one cause of frost damage to roses. Another cause is the action of severe cold on the moisture within the plant. This is the actual freezing damage, in which the low temperature has seemingly disorganized the cells and tissues within its structure. Indeed, I have examined twigs which seemed literally to have been burst apart by extreme cold, though this, I think, seldom happens to rose twigs.

Evaporation is hastened by higher temperatures; we all know how fast water can "boil away" at 212°. A rose twig may endure the cold, which has

lessened the evaporative demand, but when a high wind or a hot sun tremendously increases that demand, it may become impossible for the roots to supply it, and the twigs so exposed may die. They "dry up," in other words, and there is probably other injury by reason of the sudden alternations of temperature.

It is thus apparent that the danger of winter damage is increased by the exposure of the plant to high winds and to hot sun. In fact, in most of the United States this is the principal danger. Many more rose twigs are killed, it is believed, by alternate freezing and thawing, by the winter's winds and the winter's sunshine, than by cold.

The differences between varieties in frost endurance I do not know how to explain. It is always, I confess, a mystery to me that twigs of equal diameter, one on a Tea rose and the other on a Rugosa, should fare so differently in the same winter wind. Why should the plump wood on a Cherokee I am trying to have endure the climate of Breeze Hill blacken and die when the other roses near it come through unharmed?

Perhaps the physiological reason, if we did know it, would not help us to avoid the damage, wherefore it is as well to turn toward the protective measures necessary, within our knowledge.

Most roses of our gardens are not "tender" to frost as is a coleus, a geranium, a zinnia. Indeed, roses seem to enjoy and profit by the cool nights of early fall, and I have taken many a lovely bud from plants that slowly perfected them after tender vegetation had been killed by the first frosts. Therefore there is no necessity for early protection, but rather it is desirable that the growing wood "harden off," as the florist expresses it, through full exposure.

Nor is it desirable to apply protection of any sort until the ground is lightly frozen. Once a temperature of 25 to 30 degrees has accomplished the stiffening of the ground, protection may safely be undertaken, in the idea of preventing the thawing of the surface soil.

It is obvious from what is above written that high and bitter winter winds are dangerous and often destructive to some roses. It has not been stated, however, that air circulation is desirable, or that close and sloppy or soggy protection—such as that given by wet or "green" manure, or wet leaves—is actually dangerous. I have seen roses ruined by rotting off at the ground through the use of such protection.

Thus it appears that dry and clean protective material, permitting air circulation, is best.

But the matter of wintering roses successfully anywhere in America had better be dealt with, after we understand the basic principles of it, somewhat in climatic detail. We need to scan the map, and to consider the rose zones established by frost observations as conducted by the Bureau of Plant Industry in the Federal Department of Agriculture, as reported on the outline map printed on page 183. (This map was prepared for and first shown in the 1920 "American Rose Annual.")

It must again be insisted that this map does not set limits to rose-growing, or to the successful wintering of roses. It is "based upon late frosts in the various regions, as recorded by the United States Weather Bureau," and also upon winter's cold. *It has no reference whatever to protection*, but does offer an opinion as to locations in which the classes included may be expected to endure the winter exposure and to avoid late spring frosts that might do serious damage to the young growth.

Mr. F. L. Mulford, attached to the Department of Agriculture as Horticulturist, writes thus of the first zone, designated as "suitable for Tea, Noisette, and other tender roses": "The area indicated by horizontal lines covers the region to where the average date of the

last frost is in March, and where tender roses would find no frost danger." Thus in the irregular line across the continent extending from South Carolina to California, broken in western Texas, New Mexico, and Arizona, there is no need to consider winter protection for any roses discussed in this book.

Most important is the dotted area of the map, covering about one-fourth of the United States in extent, but including close to one-half the area in which the most of the amateur rose-growing is done. It is within this region that the Hybrid Teas are expected to endure the winter without any protection, though along the northern part of this very irregular line moderate protection is desirable. Considering Washington as within this northern part, the following, quoted from the 1919 "American Rose Annual," as written by Mr. Bisset, a capable rose-lover of that city, is in point:

The winter protection usually recommended for covering the more tender varieties is strawy manure. This is rather a loose term, and the ordinary individual is very apt to take the general run of barnyard manure for this purpose. Such manure, as a rule, contains more or less decayed material that lies closely to the stems of the rose, consequently keeping them wet, and often starting decay or rot of the stems and branches.

The ideal covering for tender varieties is any coarse material that will keep off cold winds and hot sun alike, and yet permit ventilation. Fresh stable manure, where long straw had been used for bedding the horses, would serve, if all of the fine particles were shaken out, using only the coarse material for protecting.

An excellent covering is the salt marsh grass that is so abundant in many parts of our Atlantic Coast States. If this can be procured, no better winter protection can be offered. Failing this, the easily grown stems and leaves of the Japanese grasses of the *Eulalia* family form an excellent protection. As this material is coarse and firm, it does not pack, and therefore gives all the protection that is necessary without holding the moisture around the stems.

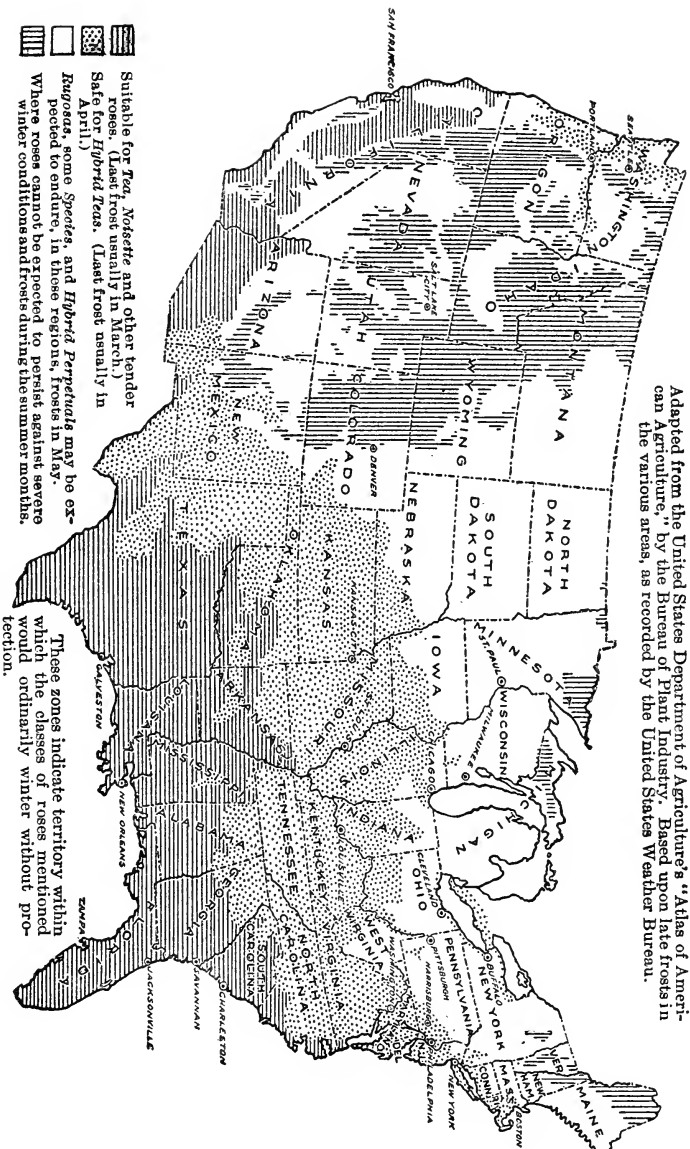
Another excellent protecting material is evergreen boughs from pine trees, Norway spruces, or balsam firs. These are all ideal for this purpose.

It is not the amount of material that one puts around the rose that does the protecting, but its quality of open shading. It is essential that what is used be light enough or open enough so as to permit a free passage of air. As a rule, it is less the severe frosts that injure our roses than the continual thawing and freezing, the exposure to drying winds and to the hot suns of late winter. In other words, as Mr. McFarland has said, "Roses do not require a blanket for their protection," but something that will allow a free passage of air around them and at the same time protect the stems from the sun's rays.

Because my own rose-garden at Breeze Hill is on the northern fringe of the dotted belt of rose-land in America, I may from experience emphasize what Mr. Bisset has said as to desirable protection involving "open shading." I think I would not

THE ROSE-ZONE MAP

Adapted from the United States Department of Agriculture's "Atlas of American Agriculture," by the Bureau of Plant Industry. Based upon late frosts in the various areas, as recorded by the United States Weather Bureau.



The ROSE-ZONE MAP, as Prepared by the Department of Agriculture.

Reprinted by permission from the "American Rose Annual" for 1920

lose any rose twigs here in any ordinary winter if I kept off the bitter west winds and the strong sunshine of January and February. I do apply evergreen boughs liberally after Christmas, endeavoring to so arrange them in the beds that all the rose plants are shaded, and that a heavy snow will not break down the bushes. Manure protection has not been successful, as before noted, and the burlap method used in central New York, as hereafter detailed, is not good where there is no certain continuity of frozen ground or covering snows. The few Tea roses I grow come through with the Hybrid Teas—Safrano, Duchesse de Brabant, Wm. R. Smith, etc. No protection whatever is given to the climbing roses, and the only damage in a dozen years was when an exceptional January drop below zero, continuing for many days and including bitter winds, injured many other things than roses.

The clear areas, indicated as safe for the “Rugosas, some species, and Hybrid Perpetuals,”
Rugosa Zone include sections within which are grown some great rose collections. Everywhere in this section the Hybrid Teas flourish finely, but must be protected. Again the fact is emphasized that the Rose-Zone Map does not indicate limits for protection, but for unprotected

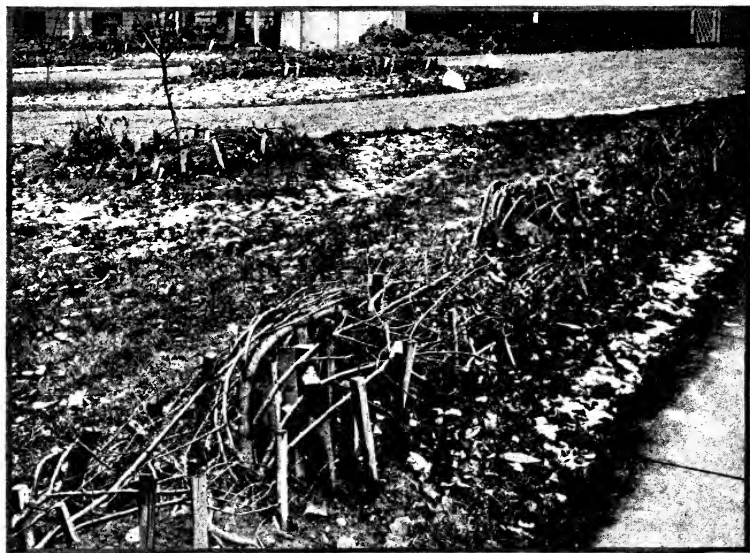


PLATE XVII. Method of Winter Protection for Hybrid Tea Roses in Auburn, New York. (See page 185.)
From the "American Rose Annual," by permission.

roses. *Any rose is winter-hardy anywhere if sufficiently protected*, and the matter of sufficient protection is often intensely local, just as is the other matter of rose varieties. For example, note on page 187 the method of protection found necessary near Chicago by Mr. W. C. Egan, while nearly two hundred miles north of him, on the eastern slope of Lake Michigan, a correspondent in Traverse City, Michigan, reports General MacArthur and Gruss an Teplitz yet in full bloom, "all with leaves as bright and green as in June," on December 3.

In this section, the Finger Lake Region of central New York is notable, because of rose interest and rose success. The roses of Mr. D. M. Dunning, of Auburn, are superb, as I can bear personal testimony. His protecting method is here quoted from the 1921 "American Rose Annual." (See Plate XVII, facing this page.)

We go over the beds and remove all unnecessary wood, cutting the same as close to the ground as possible, and leaving two or three, rarely four, of the best canes. This is for the Hybrid Perpetuals. For the Hybrid Teas, where we have a different growth, we remove what we consider the unnecessary wood, retaining only such as will give the best results for the coming season. We then bend them down without cutting back, and fasten them down with stakes. Sometimes the stakes are used X fashion, but more often they have nails driven in near the top to form a hook. We retain these

Central
New York

canes full length for two reasons: Because they retain more vitality at full length than when cut back; and because they are much easier to handle for pegging down in that way than they would be in a shorter, stubby form.

These stakes answer a double purpose: First, to hold the canes down, and second, and just as important, to support the burlap covering under a heavy weight of snow. If they are properly placed, especially at the bend of the cane, near the base, they will support any accumulated weight of snow and ice that may form during the winter, as the freezing of the ground holds them very firm.

The third and final act is to cover with burlap which is pegged down with small sharp stakes at the edges. No covering of any kind is used under the burlap, and we prefer not to cover with the burlap until the ground is frozen, the aim being to retain an even cold temperature with a free circulation of air to keep the canes dormant through the winter. An important feature of the burlap is to protect the canes from the winter sun, as sunshine on a frozen cane under zero temperature is almost sure death. With such protection I have wintered my two hundred or more varieties of tender roses, including a number of Tea roses, for the past twenty years with practically no loss.

The burlap is not removed in spring until the frost is out of the ground, so that the stakes are loose, and then it is dried out and with the stakes laid away for another season.

Another very successful rose-lover, not far from Mr. Dunning, hills up the ground over her roses completely, so they are buried in earth, with a top protection of barnyard manure or refuse and leaves. Yet another boxes in the roses, as if in a house of their own.

The Boston climate is not easy for most of the less hardy roses, but they are readily brought New England through the New England winters by the same method last above mentioned—that of earth protection with litter or “roughage” above it.

Lovely roses are grown on Mt. Desert Island, Maine, where the ideal cool and moist conditions of the summer end with a hard frost, usually in early October. The protecting process follows:

On Mt. Desert the roses are put into winter quarters about the middle of November. The dwarf roses are pruned of about half as much as will be removed in the spring; a trench is dug between each two plants, in which they are laid spoon-fashion, and covered with earth. The climbers are all laid down on the ground and likewise covered with earth. During December, after the ground is thoroughly frozen, pine branches and straw are put over the plants. Unpacking does not take place until the middle of May; the climbers are loosened earlier. The flowering season is about three weeks later than at Elizabeth Park.

The high winds of Lake Michigan give Mr. W. C. Egan trouble, but he holds his roses successfully Near Chicago at Highland Park, about twenty miles north of Chicago, in a most delightful garden of many plants of all sorts, for he has a broad love for plants. His method follows:

It is only within a comparatively recent date that it was known that the Hybrid Tea rose might be successfully grown

in this region. The main difficulty has been their habit of bidding you goodbye the first winter after planting. If you treat them right they will remain, and, like your poor relations, be always with you.

About November 10, I cover the bed 8 to 10 inches deep with soil from an unoccupied plot adjoining, and then put on a 2-foot covering of leaves held in place by brush or cornstalks. In the spring they come out smiling and bless you with blooms all summer long.

I have tried all known methods in protecting climbing roses and have settled down to one that has always produced success. They are taken down, bundled, and the tops coiled in so as to take up as little room as possible. When the canes are so stiff that the upper part of the bundles stand too high, I drive a stake into the ground, and putting the top over sideways, tie it to it. Then a knock-down box is placed around them and dry oak leaves—any hardwood tree leaves will do—are put in, covering the rose a foot or more about its top. A slanting water-tight roof is then put on, and farewell speeches are in order.

One main feature is the water-tight roof. A leak causing a drip will, if it touches a cane, rot and blacken it. Small holes or cracks in the sides do no harm, for the water entering there runs down the sides and does not reach the rose. I have seen climbers carried safely over some winters by being covered with leaves, which of course became wet, but it was an even wetness, and not in spots.

Reference has been made to Traverse City, Michigan, where Mr. Fred Davidson thus "gets results":

We are located upon the high ground between the two arms of Grand Traverse Bay, where the northwest winds have clear sweep, and as we had no windbreak, a tight board

fence 6 feet high was placed about the west and north sides. This has proved of double advantage—added warmth in spring and summer, and in the winter the snow piles over and makes drifts which protect the plants from any temperature which we could have (28 degrees below zero, our coldest thus far, did no damage whatever). The snow cannot be depended upon every winter, and for that reason the plants are hilled up with soil 8 to 10 inches, and after the ground freezes litter is spread over [the beds to retain the frost. The snow is our good friend and helps to protect such species as the Penzance hybrids which Mr. Egan has stated he was compelled to banish from Egandale.

The climbing roses are laid flat upon the ground and covered completely with soil; they come out in the spring with canes as fresh as in the fall. This effect upon all rose plants seems to warrant hilling up the Hybrid Perpetuals although they do not require it for protection. The best results have been obtained from stock budded upon the Multiflora root.

In cold Canada roses are most popular, because they respond to the loving care given them. A
In Canada correspondent in Montreal, where the temperature sometimes falls to minus 20° in the winter, with unusual spring variations due to the lower levels of this island, pointedly remarks: "Were we able to grow roses with as little trouble as we grow sunflowers, I expect we would have no more interest in them." (This remark is referred to those rose-fussers who want to merely send \$5 for a half-dozen roses, and let "George" do the rest!) But Mr. Nelles

loves the trouble he takes, for his reward is the guerdon of all true rose-lovers—beautiful blooms! He covers his Hybrid Teas with earth, which after it is frozen is again protected against the sun by strawy manure and brush to hold the snow. So treated, his garden rests from mid-November to April, working splendidly for him all summer.

Yet farther north and east along the great St. Lawrence is Quebec, near which Mr. H. A. Norton does famously with roses. He protects thus:

In that part of the Province of Quebec known as the Eastern Townships, the winter temperature is frequently 20 degrees below zero, and sometimes much lower, yet a large number of the Hybrid Tea, and practically all the Hybrid Perpetual roses may be grown here with good success.

For several years the writer has been growing about 600 bushes, in fifty or sixty varieties, with little or no winter-killing. The only winter protection consists of hilling up at the base of the plant with 8 to 10 inches of earth. No other covering is used.

In the writer's opinion much depends upon the conditions in which the plants go into the winter. It has been observed that the loss was less following a comparatively dry autumn when the wood ripened well. In seasons when late growth was made and wood not well ripened, the loss was heavier, even though the winter was milder.

Near Niagara Falls is the pleasant community of St. Catharines, Ontario, distinguished particularly by a most successful municipal rose-garden, presented to it by the late ex-mayor, Mr. W. B.

Burgoyne. His protection for roses in winter is simple:

In answer to your inquiry as to how we winter our Hybrid Tea roses, will say that the general way is to heel up the plants about 6 inches, and fill up the intervening spaces with leaves or manure, some being very careful not to permit the leaves to adhere closely to the plants. The protection is left on as late as possible, depending upon the season, but is usually removed in April. Our losses are very slight.

But why call more witnesses? The case of the Queen of Flowers *vs.* Jack Frost is fully made up, and the jury of real rose-lovers everywhere in America finds for the plaintiff. She wins every time, if she is sufficiently loved to receive the evidences of that love in reasonable care. We must value the roses more than we do sunflowers, as previously suggested, and if we do, the "reasonable care" is gladly provided.

To sum it all up, roses may be successfully wintered anywhere in America if a few essentials are provided and continued. These are:

1. Well-ripened late summer and autumn growth, provided by withholding extra water and fertilization after early September.

The Essentials
of Protection

2. Protection over winter mainly from alternate freezing and thawing, from bitter winter winds and from hot winter suns. This may be accomplished by earth covering where temperatures remain below zero for many days, and in milder climates by such loose

material as will shade without becoming soggy—evergreen boughs being probably the best material, and vertically held loose straw around the plants almost as good.

3. Protection for winter by staking and tying or otherwise sustaining from whipping about is desirable for the longer canes.

Nothing has been said as to the protection of the smaller “own-root” roses. If the plants are ripened by withholding watering or fertilizing after September 1, they have the best opportunity to pull through when covered with earth to a depth of 6 inches or more, or they may winter safely under evergreen boughs.

After all, protection is intimately related to rose sense, rather than to arbitrary rules. I pity any real rose-lover who does not experiment, does not venture, does not “take chances” intelligently in order to increase his own knowledge. Even if he loses rose plants, he wins knowledge, and that, we are constrained to believe on high authority, is more precious than rubies!

CHAPTER XI

WHAT ABOUT ROSE VARIETIES?

THE burning question of the rose-lover, new or old, a veteran or a tyro, is, What varieties shall I plant? To the beginner it is perplexing, almost distracting, this matter of "the right roses." To the victim of many a try-out, many a disappointment, comes continually the query as to which of the glowingly described new sorts he shall adventure with. Something better in color, in form, in size, in fragrance, in habit, in bloom continuance, in disease resistance, in hardiness, is the constant hope of the grower.

Of the making of varieties there is no end. With more than a thousand rose varieties now in American commerce, and with over a hundred new sorts offered abroad each year, it is little wonder that the amateur is bewildered.

The conventional catalogue does not help him, for its perspective on rose varieties is scarcely normal. All are "the best ever;" no faults are reported; the abundant adjectives of the English language are exhausted in the descriptions. One

is reminded of the answer given by a bishop to the question of the young preacher whose first sermon he had just heard. There had been many long words, many glowing periods, many extravagant gestures, but very little really said. "What did you think of my sermon?" hopefully queried the neophyte. "Well, my dear young brother," said the bishop, "in view of the way you used up the English language in your discourse, I fear that if you had had anything of real importance to say, there would have been nothing left for you but to make faces!" So with these rose descriptions; if a European hybridist should produce a new rose as sweet as *La France*, as large as *Paul Neyron*, as exquisite in color as *Los Angeles*, as free-blooming as *Gruss an Teplitz*, as disease-resistant as *Lady Ursula*, as beautiful in plant-habit as *Spinosissima*, as vigorous as *American Pillar*, as hardy as *Conrad Ferdinand Meyer*, he would have no way left of telling about it so as to be believed!

The American Rose Society has adopted a card for descriptions, on which are set forth all the qualities and habit-relations of roses, in such form that the describer need only check opposite the items that fit the rose under consideration. He can, of course,

Standard
Descriptions

check untruthfully, but he avoids the gushing, adjectival language that is not descriptive. But few originators anywhere in the rose-world now fail to send these cards to the editor of the "American Rose Annual," in whose office at Harrisburg, Pa., rose descriptions are filed and cross-indexed for easy reference. Constantly, too, older varieties are being checked on these cards, toward the completion of a really reliable catalogue.

Yet, with ideally accurate descriptions, how is the amateur to choose? Nothing is more certain than that a rose of great value in one locality may be of mediocre quality in another, and the absence in the catalogues of any reference to localization leaves the purchaser in the dark. Parenthetically, it may well be hoped that the great rose-sellers of America will become the great rose-testers, for it is not too much to expect that the nurseryman maintain a rose-garden in which he discovers the demerits as well as the merits of the varieties he sells. An account is before me, as I write, of a rose nursery in England which has in its test-garden more than 2,500 species and varieties, carefully classified for comparison and study. It may be for this reason that the catalogue of this nursery is free from flamboyant adjectives, and tells clearly and simply about roses. Another

English catalogue courageously groups the roses that are similar, describing simply in the order of preference by customers, while not hesitating to tell the faults as well as the merits. I know of but one American grower who approximates this treatment of varieties, and it is a satisfaction to learn that his business is very prosperous. We American rose-buyers are reasonably intelligent, and the nurseryman ought to realize that candor and truth will be appreciated. The idea that a rose will not sell unless complete perfection is ascribed to it is sheer nonsense.

It is apparent that rose varieties change constantly, and all too often a good old rose is retired because of the noise made about a new variety hardly as good. The measure of change can be noted when one compares the 956 varieties carefully described by Ellwanger in "The Rose," published in 1882, or the 125 varieties offered in the Crapo (New Bedford, Mass.) catalogue of 1848, with any modern list. Hardly five per cent of the Ellwanger citations, and but thirteen of the Crapo varieties, are now in commerce. With the many new English, French, and German varieties shouldering into commerce every year, relying more on large claims than on high character, and in all too many

Changing
Varieties



PLATE XVIII. Twelve Favorite Bush Roses, as selected in a Referendum of the American Rose Society. (See page 199.)

- | | |
|-----------------------------------|-------------------------------|
| 1. Gruss an Teplitz, HT. | 7. Ophelia, HT. |
| 2. Duchess of Wellington, HT. | 8. Mme. Edouard Herriot, Per. |
| 3. Kaiserin Augusta Victoria, HT. | 9. Columbia, HT. |
| 4. Killarney, HT. | 10. Frau Karl Druschki, HP. |
| 5. Radianee, HT. | 11. Mrs. Aaron Ward, HT. |
| 6. Los Angeles, HT. | 12. Sunburst, HT. |

instances virtually duplicating existing sorts, we make too slow, even if steady advance. Perhaps through the effective results of such test-gardens as the one in Portland, Oregon, and of others yet to be established, we will come in time to weeding out "ringers" and sorts of little merit at less expense to the rose world. As will later appear, there is a very definite try-out going on among amateurs, but at a somewhat discouraging cost.

It is but just to say that members of the American Rose Society are kept informed of all new introductions in the annual review of the world's new roses, and in such a manner as to give them reasonable guidance. Further, in Mr. Currey's admirable article, "The Basis of Merit in Roses," printed in the 1917 "American Rose Annual," a workable method of comparing and determining merit and value has been provided.

But such work is for the more experienced rose-lover. I want in this book to afford assistance to those who have yet to get experience, and to make that getting less aggravating. There is now available some most valuable recent experience, and it is here presented, in the feeling that it provides a safe basis upon which to begin.

In 1922, as reported in the "American Rose

FAVORITE BUSH (TEA, HYBRID TEA, AND HYBRID PERPETUAL) ROSES

IN THE NEW ENGLAND STATES (Maine, New Hampshire, Massachusetts, Connecticut, Rhode Island):	IN THE MIDDLE STATES (New York, New Jersey, Pennsylvania, Delaware):	IN THE CENTRAL STATES (Ohio, Indiana, Illinois, Kansas, Missouri, Michigan, Wisconsin, Minnesota, Nebraska, Iowa, South Dakota, Arkansas):	IN THE WESTERN STATES (Washington, Oregon, California, Colorado, Utah, Arizona, Wyoming, Idaho):	IN THE SOUTHERN STATES (Maryland, Dist. Columbia, Virginia, W. Virginia, S. Carolina, Georgia, Florida, Alabama, Texas, Kentucky, Tennessee):
Frau Karl Druschki Ophelia Radiance Duchess of Wellington Mrs. Aaron Ward Gruss an Teplitz Los Angeles Kaiserin Aug. Victoria Killarney Mme. Edouard Herriot Jonkheer J. L. Mock Lady Alice Stanley	Ophelia Frau Karl Druschki Radiance Duchess of Wellington Mrs. Aaron Ward Los Angeles Mme. Edouard Herriot Columbia Gruss an Teplitz Lady Alice Stanley Killarney Red Radiance	Frau Karl Druschki Ophelia Radiance Gruss an Teplitz Jonkheer J. L. Mock Columbia Mme. Caroline Testout General Jacqueminot Los Angeles Sunburst Killarney Mrs. Aaron Ward	Ophelia Mme. Edouard Herriot Los Angeles General MacArthur Frau Karl Druschki Lady Hillingdon Mme. Melanie Soupert Hoosier Beauty Duchess of Wellington Mme. Caroline Testout Joseph Hill Sunburst	Radiance Frau Karl Druschki Ophelia Red Radiance Sunburst Gruss an Teplitz Mrs. Aaron Ward Kaiserin Aug. Victoria Columbia Mme. Caroline Testout Lady Hillingdon Duchess of Wellington

FAVORITE CLIMBING ROSES

IN THE NEW ENGLAND STATES:	IN THE MIDDLE STATES:	IN THE CENTRAL STATES:	IN THE WESTERN STATES:	IN THE SOUTHERN STATES:
Dr. W. Van Fleet Silver Moon American Pillar Dorothy Perkins Tausendschön Paul's Scarlet Climber Cl. American Beauty Excelsa Hiawatha Gardenia Aviateur Bleriot Christine Wright	Dr. W. Van Fleet Silver Moon American Pillar Paul's Scarlet Climber Dorothy Perkins Tausendschön Cl. American Beauty Gardenia Excelsa Christine Wright Hiawatha Cl. Lady Ashtown	Dr. W. Van Fleet Silver Moon American Pillar Cl. American Beauty Dorothy Perkins Excelsa Tausendschön Paul's Scarlet Climber Christine Wright Hiawatha Aviateur Bleriot Gardenia	Dr. W. Van Fleet Silver Moon Tausendschön American Pillar Cl. Mme. Car. Testout Cl. Cécile Brunner Dorothy Perkins Paul's Scarlet Climber Mme. Alfred Carrière Excelsa Cl. American Beauty Maréchal Niel	Silver Moon Dr. W. Van Fleet American Pillar Cl. American Beauty Dorothy Perkins Paul's Scarlet Climber Tausendschön Maréchal Niel Christine Wright Excelsa Gardenia Mrs. Robert Peary

Annual" for 1923, a referendum was conducted among the membership of the American Rose Society. Each was asked to state, in the order of preference, his selection of the best dozen "bush roses" (meaning Hybrid Tea, Tea, Hybrid Perpetual, etc.) and of the best dozen climbing roses. The response was surprising in volume and acuteness, and even more surprising in unanimity. It is presented in easy comparative shape for the five great sections of the country on page 198, and below for the United States and Canada as a whole.

Summary of American Rose Society's Referendum:

FAVORITE BUSH ROSES IN UNITED STATES AND CANADA:

Ophelia	Mrs. Aaron Ward
Frau Karl Druschki	Gruss an Teplitz
Radiance	Mme. Edouard Herriot
Los Angeles	Columbia
Duchess of Wellington	Killarney

FAVORITE CLIMBING ROSES IN UNITED STATES AND CANADA:

Dr. W. Van Fleet	Cl. American Beauty
Silver Moon	Tausendschön
American Pillar	Excelsa
Dorothy Perkins	Gardenia
Paul's Scarlet Climber	Christine Wright

Forty-one states and provinces were represented in this referendum, and 426 votes were received,

wherefore it may be accepted as indicating the preferences of competent and experienced rose-lovers all over America. That their choice was by no means limited is seen when it appears that 289 Tea, Hybrid Tea, Hybrid Perpetual, Hybrid Rugosa, Noisette and other rose varieties were mentioned in the ballots, with a very decided lead for the leaders—202 votes for Ophelia, 183 for Frau Karl Druschki, and 154 for Radiance.

The five “favorite dozens” surprisingly include but 23 sorts. (See Plates XVIII and XIX.)

The verdict for the climbers is as significant, with 262 for Dr. W. Van Fleet, 197 for Silver Moon and 174 for American Pillar—all American roses hybridized by Dr. W. Van Fleet.

Here, then, is safe guidance for the beginner. In any one of the divisions he can have a dozen dependable bush roses to start with, and if he bought all of the 23 sorts included in the five lists he would also be safe.

It is interesting to note that the favorite dozen includes a full range of color and fragrance, as well as form and bloom frequency. This result shows not only the discrimination but the forward look of the voters, for two of the dozen have been sent out within five years, and these two and the splendid Radiance are roses of American origin.

Of the dozen dominant climbers all are American save three, a most encouraging fact.

Now with these selected, tried, approved roses as a basis, any amateur may begin his adventuring. He will, with these blooming and glowing in his garden, develop his own preferences, for color or form, or for some other quality of excellence. If he wants quantity and continuity of roses, he will select in that direction, while if he is after what the English rosarians call "exhibition blooms," obtained at the sacrifice of quantity and often at much special effort, he will plant those sorts recommended in that fashion. It is his pleasure and delightful privilege to acquire a store of rose-lore, to discover which of the less-known sorts are adaptable for his conditions. I thus adventure every year, but it would be a hardship to have to depend on anyone's rules for my trials, and an impropriety to scold anyone for my tribulations!

As the amateur gets along, he will, I hope, make other essays into rose pleasures through the

selection of rose varieties for special
What Is a Double Rose? qualities apart from the main items.

He will want to know the dividing point as to petalage, and I quote for him from Mr. Currey's score-card: "A single rose shall be one which has from four to ten petals; a semi-double

rose shall be one which has from eleven to twenty-five petals; a double rose shall be one which has over twenty-five petals.”

Just here I hope the amateur will come to love the few-petaled roses, with their special grace. That lovely K. of K. in scarlet; the open beauty of a full-blown Duchess of Wellington; the apple-blossom exquisiteness of the rare Sargent rose* (not Prof. C. S. Sargent—just Sargent, a Dawson hybrid); the wondrous sweetness and the dark but fiery glow of the aggravating Chateau de Clos Vougeot—these endear to me the “open” roses. I have in mind a classification of my own, into peony form, cactus form, and rose form, aside from the true single sorts, and I certainly hope to accumulate data as to the roses of pleasant and copious fragrance—I do not love those degraded Tea sorts that seem to smell of tobacco.

In other chapters I have written of roses for bedding; that is, those that persistently bloom.

Bedding Roses These are not too plenty in number. Aside from the dependable Polyanthas, always showing flowers (see Plate IX, facing page 81) there are two Hybrid Tea roses—Gruss an Teplitz and Ecarlate—that persist in producing their brilliant blooms all through the

* See Plate VII, facing page 61.

season. The old Bourbon Hermosa does the same with its clear pink flowers, not very fine, but always there. Lady Ursula and Duchess of Wellington are rather industrious, too, if kept growing.

Harking back to the approved dozen roses for America, it will be noted that there is but one Hybrid Perpetual, the fine but scentless great white Frau Karl Druschki. I would not want to miss the color or the odor of General Jacqueminot, or the form, color, and fragrance of George Arends. J. B. Clark and Ulrich Brunner are worth while. Baroness Rothschild is another of unique quality; and Conrad Ferdinand Meyer, the Rugosa hybrid of tremendous vigor and rugged hardiness, needs a place in any garden that has a corner in which it may be trained up, up, to produce its lovely, fragrant, pink, evanescent blooms. The new Rugosa hybrid, F. J. Grootendorst, will repay any planter. It is, I believe, the forerunner of a new race.

The producer of the justly popular Radiance and Francis Scott Key, Mr. John Cook, has given us a wonderfully beautiful rose in Glorified La France, the result of a cross between Frau Karl Druschki and Mrs. Charles E. Russell. It is too double to ever become popular, but its fine

quality can be inferred from Plate XVI, opposite page 177.

There are some other rose uses related to beauty of twigs and hips or seed-pods that ought to be mentioned. Many of the wild roses have enduring hips of brilliant color. *Rosa pomifera* shows very large hips, that stay long. The fine Lucida rose, *R. virginiana*, is ornamental all the time, and *R. setipoda*, with wine-colored twigs and red fruits, is another good one. *Rosa Hugonis* has peculiar and pleasing winter twigs and black hips. *Rosa rugosa* is the easiest of all these winter-decorative roses, for it is good all the time.

There is a "blue rose," the hideous Veilchenblau, a rampant climber, and people who admire it will probably also like Viridiflora, an equally ugly thing with so-called green flowers. I mention these merely to designate them as abnormal, like a man with six fingers.

But the door has been opened with the national selections of varieties above mentioned; it is for the amateur to enter and possess the land, to start safely and to continue joyously!



PLATE XIX. Twelve Favorite Climbing Roses, as selected in a Referendum of the American Rose Society. (See page 199.)

- | | |
|----------------------------------|---------------------------|
| 1. American Pillar, HW. | 7. Gardenia, HW. |
| 2. Climbing American Beauty, HW. | 8. Excelsa, HW. |
| 3. Hiawatha, HW. | 9. Christine Wright, HW. |
| 4. Silver Moon, HW. | 10. Aviateur Bleriot, HW. |
| 5. Tausendschön, Mult. | 11. Dorothy Perkins, HW. |
| 6. Paul's Scarlet Climber, HW. | 12. Dr. W. Van Fleet, HW. |

CHAPTER XII

PRODUCING ROSES, OLD AND NEW

OF Nature's rose-production methods we know a little, but only a little. That the seeds or "hips" carried by birds may give rise to new plants where they are dropped is obvious, just as the increase in the size of a plant as its roots work outward is obvious. But how did it come that one wilding in America bears pink flowers while another in Asia is covered in bloom-time with yellow? With the mysterious kinship seen by those whose patient eyes and eager brains follow in the footsteps of the great investigators, why does the *Rugosa* tower up with its strong stems and wrinkled leaves, while shining *Wichuraiana* trails on the ground?

But this is not the place for fascinating speculations upon plant origins or distribution.

Scanty as is our knowledge, we do know how to multiply plants of the same characters, and we are slowly learning how better to produce new plants by studied or incidental combination of the variable qualities in a chosen parentage.

The first bit of knowledge is covered in the subject of propagation, and the second touches upon hybridizing or cross-breeding.

The sowing of seeds is the simplest and most natural form of reproduction, and a rose is said to be a distinct botanical species if it will so reproduce itself or "come true," although here we are coming to recognize Nature's tendency to promote variation, in that no two seedlings are precisely identical.

The amateur does little rose propagation by seedage. Seeds (separated from their envelope or hip) may be sown singly, not
Roses from Seed broadcast, in a warm and sheltered spot outdoors, in light and well-drained soil covered with half an inch of fine soil, more usually in the shallow boxes called "flats" by greenhouse men, or in shallow pots in a sunny home window. Some sorts germinate promptly if fresh, while others may give no sign for a year or more; Dr. Van Fleet habitually held the flats in which he had sowed the precious seeds from his cross-fertilization work "for at least five years." He thus writes: "Seeds of the great majority of rose species, native and exotic, and their hybrids, refuse to grow until the second year after planting, and individual seeds have been known to 'hang

fire' as long as seven years, growing with full energy when they did start."

Once germinated, the little seedlings must of course be carefully transplanted and given particular attention until they are established. Few of the plants raised from hybridized seed will show their settled characters for at least three to four years, and the experienced hybridist keeps them under close observation, meanwhile usually propagating from those that seem worth while.

Propagation by cuttings or "slips" is the main method for producing "own-root" roses, of whatever class. It may be done with "soft-wood" twigs, or with "hard-wood" growths. The former process requires "bottom heat," as usually available in a greenhouse, and need not be detailed here. With ripened or "hard" wood, cuttings can be made of two or three buds or eyes, and these planted in pots or boxes or in a sheltered spot outdoors. The soil should be sandy, light, and well drained, and the cuttings thrust into it, allowing only the top bud to project. The soil must be firmed and kept moist, not wet. When these cuttings have emitted roots a half-inch or more long, they are transplanted to small pots filled with rich soil, and sheltered from sun and wind for a few days.

Roses in the garden may also be increased by "layering," involving the bending down of a shoot, which, after receiving a diagonal cut on the lower side near a bud, is covered at that point with earth, and held in place by a stake of some sort or by a stone. After a time, usually several months, the branch may be cut from the main plant and the layered plant will be "on its own." Layering is employed for some sorts that are difficult to root through cuttings.

Certain wild roses, and some climbers, tend to spread at the base by shoots which arise from the roots a few inches away from the main stem. These can be carefully separated at the roots with a sharp knife and thereafter treated as independent plants.

Budding, the theory of which is explained in Chapter IV, is the favorite method of multiplying desirable sorts, particularly of the bush roses. Elsewhere there is discussion (see page 67) of the various stocks that may be employed, wherefore it is here in point only to suggest the operation itself. For the amateur who may desire to experiment in this facile means of propagation, the details relating to the use of one favorite stock, as provided by a notable rosarian,

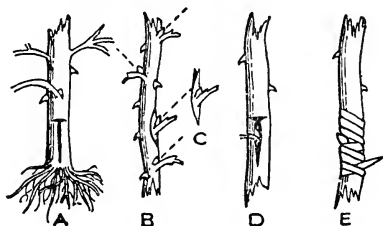
Dr. Robert Huey, are here quoted from the "American Rose Annual."

Budding is practiced to secure a more vigorous root-action and consequently greater growth and development . . . The process of budding is simple and easily learned, and the results more than repay the slight amount of trouble and work involved. . . .

The Japanese Polyantha Multiflora has proved to be a good stock for most of the Hybrid Perpetuals, Hybrid Teas, and Teas in this climate. It is of very vigorous growth, and its seedlings mature rapidly. Seed sown in a southeastern window of a dwelling-house on February 9 produced plants large enough to set in the open ground early in May, and to bud in August. Of nineteen buds set at this time, sixteen "took," but three were lost during the winter.

If the buds are inserted on the collar between the first "break" and the roots, there will be no suckers; but if the stocks are grown from cuttings, the usual risk of suckers being thrown out will be encountered. The best buds are obtained from a flowering shoot at the time that the bloom is fully open. The upper bud is usually not so "plump" as the others. If so, it should not be used, but the others will generally be in the right condition. When the shoot is cut, the groups of leaves should be removed, leaving half an inch of the footstalk at each bud for convenience in handling.

With a sharp knife cut the bud from the cion, beginning



Detail of rose budding. *A*, the stock, with slit cut for insertion of bud. *B*, the rose shoot. *C*, bud cut from shoot. *D*, bud inserted in stock. *E*, wrapping of raffia.

at a point half an inch above the bud and ending half an inch below, removing the bud with a small portion of the wood attached. Then, with the point of the knife inserted between this layer of the wood and the bark, remove the wood carefully and the bud is ready for insertion. If on removing this layer of wood a deep indentation appears beneath the bud, this is evidence that the wood is too ripe and that the eye has been removed. Seek a less ripe shoot.

Remove the soil carefully from around the stock, exposing the upper roots, and wipe clean. Plan to insert the bud at the collar, i.e., that portion of the stock between the uppermost root and the first shoot. This space is usually from an inch to an inch and a quarter in length, and affords ample space for a successful operation. Be sure that your budding-knife is sharp, for you always need a clean cut. Make a longitudinal incision through the back 1 inch in length and a crosscut of about one quarter of an inch at the top of the longitudinal incision, but do not cut into the wood any deeper than necessary. Insert the thin bone handle of the budding-knife into the incision at the top and gently separate the bark from the wood on both sides the full length of the cut, about a quarter of an inch wide.

If the bark does not separate readily, the stock is not in the best condition for the success of the operation. Soak the plant and adjacent ground *thoroughly*, and wait two days, when you will probably find that the bark will separate satisfactorily.

The bud should be cut *now* (not before) and inserted by sliding it under the bark, beginning at the top and gently pushing it down. If any portion of the bark projects above the crosscut, trim this off evenly. If the lower end of the bud is cut to a triangular point, it can readily be pushed to place. Bring the edges of the cut together and tie *tightly* with *wet raffia*, beginning below the cut and ending above it.

Be sure that every portion of the cut is covered and that the edges are drawn tightly to the bud, but dexterously pass the raffia around the eye as it must not be covered. Do not remove any branches from the stock unless it is necessary to get at the collar, in which case cut out one or two of the lowest. The more wood left, the greater flow of sap.

Be sure that no dirt gets into the incision or on the bud. Do not cover the bud with earth, but protect it from the sun's rays. The north side of the stock will be found best in which to insert the bud, in this climate. The operation is now complete until February, when the entire top of the stock should be cut off clean, about half an inch above the bud.

If upon examination it is found that the bud has not "taken," the stock should not be cut back, but budded on the other side the following June. As soon as the bud begins to grow, a light stake should be driven close to the plant and the new growth tied to it, that it may not be blown out by high winds until firmly established.

The plant should be taken up in the autumn and placed in its permanent home, with the bud set about 2 inches beneath the surface.

Budding is also done upon Manetti or Brier plants grown from cuttings rather than from seeds, the process being virtually the same.

A method of budding that will interest amateurs uses a form of *Rosa odorata* (No. 22449) found in a garden at Pautung Fu, Chihli Province, China, by the noted explorer for the Department of Agriculture, the late Frank N. Meyer. This rose,

Novel Budding
Method

which has proved entirely hardy at Breeze Hill for four years, grows very rapidly and forms many long, slender canes. It is of the use of these that Peter Bisset has written in the "American Rose Annual":

Cuttings of the young wood grow so readily that with ordinary care ninety to ninety-five per cent of those put in an ordinary propagating-bench will root. It has also been found that the vigorous young canes, often 5 to 8 feet long, can be used as a stock upon which to insert between each leaf or eye, in the manner of ordinary shield- or slip-budding, buds of any varieties it is desired to propagate. Later, when these buds have united, the canes are made into ordinary cuttings, each with a bud of the desired variety, which will root readily in slight bottom heat in an ordinary sand-propagating-bench, while the inserted buds will give rise to strong, healthy plants. . . .

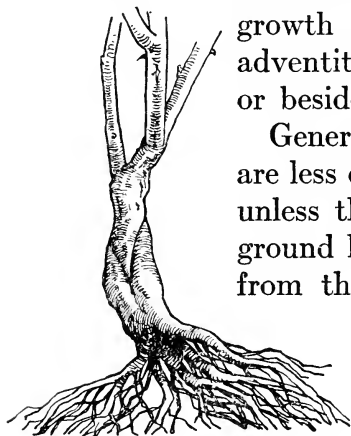
Further, this No. 22449 form of *R. odorata* has been successfully used as a grafting stock. The young canes are cut into suitable lengths, and upon these are cleft-grafted or "worked" cions or pieces of wood of the desired variety. The completed grafts are then potted singly in small pots, which are placed in an ordinary sweat-box used for young grafted stock, and maintained at a temperature of 75 to 80 degrees. Simultaneously, the cuttings root and the grafts grow, and as many as ninety per cent of the cuttings thus made have succeeded.

The amateur who gains a little facility with his budding-knife may enjoy another and somewhat unusual method of making a climbing rose do double duty. An ingenious rose-lover—he was

the foreman of a street-repair gang!—budded various Hybrid Tea roses upon strong new shoots from the ground of the climber Dr. W. Van Fleet, in late June. After the buds “took,” the canes were cut off above them, and such growth ensued as gave superb blooms the same fall. By this plan one may get heavy push back of a weak-growing Hybrid Tea, in order to test results the same season. As there are usually many canes arising from the base of the strong-growing climbers, several can easily be spared for this diversion.

Grafting is a method of combining a selected rose variety with a strong-growing root-system that results in plants very similar to those produced by budding. It differs in that it is preferably done upon a seedling or cutting-grown plant of the stock which has been cut off below its top, into a cleft in which is inserted a cion of the desired sort, shaped at its base so as to fit tightly throughout the length of the cut in the cleft, with a close meeting on one side at least of the bark or cambium layer on each. When thus properly united, the union is carefully and completely protected by heat-softened grafting wax. This work is usually done in winter, and the carefully stored roots are planted

out in spring for a season of growth, at the end of which the top should be well established. Much care must be exercised to detect and prevent the



A grafted rose-plant after
a year's growth

growth of "suckers" or shoots from adventitious buds of the stock below or beside the graft.

Generally speaking, grafted plants are less desirable than budded plants, unless the union is so well below the ground line that roots will be formed from the cion to support the plant.

Yet here is no hard-and-fast line, for a well-grafted plant, worked low on a good stock, is better than a high-budded plant on any stock.

Now I may briefly and somewhat gingerly touch upon the production of new roses, of new varieties, of "creations" in fact, as if man could ever more than assemble and direct the forces placed at his hand by the Creator!

New varieties are in general of two classes. There are "sports" or bud-variations from existing
 Bud Sports sorts, and they occur without the work of man, save as he may assemble a large number of individuals of a given variety, bud-variations or mutations in which may more

easily be observed. Thus in a great planting, in a greenhouse, of *Ophelia* or *Radiance* or *Columbia*, the keen eye of the grower may one day note a flower of different form, or color, or foliage, or habit, that is markedly dissimilar to its neighbors. He watches it carefully, and if it proves to possess value, he propagates from it—usually by budding on *Manetti*, to get quicker results—and continues his observation, to note whether it remains stable and retains its value.

Such is the origin of excellent roses like *Red Radiance* and *Mme. Butterfly*. As to the cause, we may readily get into deep water, but at least we may agree with the distinguished horticulturist, Dr. L. H. Bailey, who thus writes in “*The Survival of the Unlike*”: “I believe bud-variation to be one of the most significant and important phenomena of vegetable life.” Many of our most important fruit varieties have resulted from bud-variations, for which there is just one comprehensible explanation given by Dr. Bailey, that it tends to occur when cultivation provides opportunity and food supply for Nature to make progress. I am willing, being just a plain garden Christian, to believe that bud-variation is one of God’s ways to reward man for diligence in subduing the earth—not its human inhabitants.

New rose varieties also result from seeds sown, and these again may be naturally variant, as in the origin of the excellent rose *Ophelia*,
Hybridization resulting from a chance seedling, or following careful cross-breeding. It is the latter that properly most engages us here.

Volumes, many volumes, have been written upon plant-breeding. In the past score of years, an entirely new view has come to be rather generally accepted, so that now, in the words of Dr. Bailey, "The discovery of the underlying principles of breeding puts experimentation in this field on a much surer basis, and the breeder can now approach his subject with definite understanding." In general, it is admitted that knowledge of heredity, and the consideration of unit-characters—in roses, such as color, fragrance, size of flower, substance of petals, strength of stem, resistance to disease, character of foliage, hardiness—are vital to intelligent progress.

But, after all, the complex subject is simply summed up in this statement from Dr. Bailey's previously mentioned "The Survival of the Unlike," thus: "What, then, is the mystery of plant-breeding? Only this: good care, varying circumstances, judicious selection for what you want!"

Rose hybridizers need much patience and yet

may achieve unexpected successes. For example, note this experience of Mr. James A. Farrell:

Mr. Josiah Hoopes was a great lover of roses, and under his instructions in the year 1898 I fertilized *Rosa Wichuriana* with pollen from several Tea and Hybrid Tea roses, resulting in the production of four distinct varieties. Three of these were named Edwin Lonsdale, Prof. C. S. Sargent, and Robert Craig.

The fourth was a large single pink variety, which I crossed with American Beauty, producing the rose named and disseminated as Climbing American Beauty.

This same pink seedling was again crossed with Mme. Caroline Testout as pollen parent, and there resulted four fertile seeds from the cross, all of which germinated and grew. One, when it bloomed, produced a flower similar to La France in color, but with so many petals that it did not properly open, wherefore it was discarded. Of the other three seedlings, one has been named Christine Wright, another Columbia, and the third Purity.

Think of it! Getting as good a climber as Prof. C. S. Sargent on the first cross, such a winner as Climbing American Beauty on the second, and then following with two such superb roses as Christine Wright and Purity out of four seeds!

As another example, consider the experience of the veteran, E. G. Hill, who selected sixty plants out of 5,000 seedlings that he bloomed, and from these sixty, first reselected to fifteen, eventually sent out just two, Premier and Columbia!

America sadly needs serious rose-breeding work

on broader lines than those used in the production of varieties for greenhouse culture. In recent years only Capt. George C. Thomas, Jr.,* Dr. W. Van Fleet, and Fred. H. Howard have been working openly and seriously toward different and better garden roses.

Two American hybridizers claim to have made many crosses involving new blood, but so far with results of rather negative character.

Will there be an amateur worker in roses, one who with enthusiasm, insight, and patience undertakes the fascinating effort? The field is open, the possibilities are great, the need for progress is imperative. Nowhere abroad, it is believed, is any work proceeding in rose improvement of the breadth and importance of that sadly interrupted by the death of Dr. Van Fleet.† Who will assume his mantle?‡

*Reference is made to the very lovely Climbing Hybrid Tea rose, Mrs. George C. Thomas, shown in color on Plate XIII, opposite page 137.

† Reports on the progress of Dr. Van Fleet's experiments, as he recorded his experiences and results, were printed in the successive issues of the "American Rose Annual" from 1916 to 1921.

‡ Interested inquirers desirous of considering work in rose-hybridization are referred to Prof. E. A. White's paper, "Methods of Rose-Breeding," in the 1918 "American Rose Annual." Further reading might include "Plant-Breeding Revised" (Macmillan), Bailey's "Survival of the Unlike," and the articles on plant-breeding in Vol. I of Bailey's Standard Cyclopaedia of Horticulture (Macmillan).

CHAPTER XIII

THE SOCIAL RELATIONS OF THE ROSE

QUEEN though she is, the rose is peculiarly a social flower. She touches humanity at every angle. In the garden and about the home her beauty and her sweetness do for men and women what no other flower can do. Festive gatherings and ceremonial occasions demand the rose. Indeed, most social human contacts engage her, whether it be the bud shyly pinned on the coat of her lover by the blushing maid, the flamboyant bouquet of red roses placed on the desk of the newly sworn-in legislator, or the soothing cluster that on a funeral occasion takes from the harshness of death.

Even war has claimed the rose, though the brutal and bloody contests of the descendants of brothers in the "Wars of the Roses," beginning in the reign in England of Henry VI, partook of none of the gentleness characteristic of the Queen of Flowers. The "White Rose of York" and the "Red Rose of Lancaster" eventually united, at least nominally, in the charming old

French rose, York and Lancaster, yet with us. Incidentally, in his delightful book on "Roses," Rev. J. H. Pemberton connects his present rose home in Havering-atte-Bower, Essex, England, with the peace compact in the following story:

When Edward IV of the House of York married Elizabeth, widow of Sir John Grey, a Lancastrian knight, the manor of Pyrgo was made over to her, and her adherence to the House of York was to be attested by a grateful act. Elizabeth held the manor on payment annually of a certain fee: that of presenting the King every year in the rose month a white rose on the feast of the Nativity of St. John Baptist. This was a yearly reminder to Elizabeth and evidence to the King's supporters that, although she was once the wearer of the Red Rose, now as Queen Consort of Edward IV she belonged to the House of the White Rose. The rose was doubtless gathered in Pyrgo Palace gardens. Thus Elizabeth was the Rose-Queen of Havering-atte-Bower.

In America there is yearly reminder of this in the rent paid in Manheim, a picturesque village of Lancaster County, Pennsylvania, of one red rose for the use of the ground on which a Lutheran church is maintained.

But this is not a rose history, and it is more to the point to look into the twentieth century social influence of the rose.

The first tendency one feels who, joining his own love and effort to the opportunities provided by the Creator, grows a beautiful rose, is to share

his pleasure, to tell about what he has done. With a dominant American trait at once manifesting itself, organization results. It is not in any spirit of irreverence that I declare that where two or three Americans of like tastes and purposes are gathered together, there will certainly soon appear a president, a secretary, and a treasurer in the midst of them!

So rose societies have been formed in many cities. Dr. Edmund M. Mills, that great, genial clergyman and rosarian who is the American Dean Hole, and who is responsible for flourishing rose societies in Syracuse, Rochester, and other New York cities, thus tersely states their value:

The amateur rose society can syndicate the information and enthusiasm of all its members, and make them available to all who love roses and who wish to learn how to grow them. The beginner is thus saved from costly and disheartening failures. . . .

The Marquis of Queensbury is reported to have once said that "The only place where Englishmen meet on the level is the race-course." But the amateur rose society is the most cosmopolitan organization of the city in which it is located. Men and women of all nationalities, of all political and religious faiths, meet in loving concord. Hebrews and Christians, Romanists and Protestants, the employer and employee there forget their differences, as they exchange rose experiences.

. . . The great opportunity for interesting the public is the annual rose show. . . . Hundreds of people, notebook

in hand, inspect the exhibits and ask questions.... The successful grower of roses for the cut-flower trade is not always a safe guide for the novice in the culture of roses outdoors.... Then the beginner must be reassured against the wiles and blandishments of traveling agents who know nothing about roses or rose-growing.... The hopes of the would-be rose-grower are wrecked by careless clerks in the department stores where roses are sold.... One of the missions of an amateur rose society is to inform its members where they can get what they order in roses, and at reasonable prices.

The Pacific Northwest has surely devoted itself socially to the rose. In Portland, Seattle, and Tacoma, along Puget Sound and even east to Spokane, there is deep and keen social and community rose interest. The Royal Rosarians of Portland do things for the city, and the energetic Portland Rose Society does rose work for the world. The rose is socialized in that favored land.*

A local rose society can very easily be organized where a half-dozen who truly love the rose can get together. The secretary of the American Rose Society† will gladly supply a simple form of organization, and when the local association gets started, the same official will provide further help and possibly medals, for a rose show. The local society can—and undoubtedly should—affiliate

* See Plate XX, facing page 224, of "A Portland Rose Garden."

† Address him care of "The American Rose Annual," Harrisburg, Pa.

with and participate in the American Rose Society, being thus put in fraternal contact with all the rose-lovers of all the land. Indeed, when I travel, I include as an essential part of my luggage, the Members' Handbook of the American Rose Society, which tells me who are the rose-lovers in every state and province in the United States and Canada, shown by towns. I know that my membership card is an introduction to people of assured gentility—for rose folks are the real gentlefolk, whether in mansion or in cottage.

(Despite the space limitations of the publisher, I cannot omit a word of caution and suggestion in respect to rose shows, because I have seen so many of them become shows of white paper and fancy vases, rather than of lovely roses. It is only necessary to ask thoughtful exhibitors whether the ground in which roses grow has a white surface, reflecting light to the blooms from below. If not, why the glaring, staring, light-reversing, white paper under the vases containing the pet roses? A neutral, absorbent surface, somewhat resembling the color-value of the soil, can be provided by covering the tables with ordinary brown furniture burlap, or with the dull side of brown "Kraft" wrapping paper, or by a suitable dull-painted surface. Plenty of green leaves

with the roses, the simplest possible glass, fiber, or pottery vases, and a lighting from above, if possible, will give the roses the "square deal" they deserve and need.)

Of the American Rose Society I must say that it is not a trade society, although the best tradesmen are in it, but a body mostly of amateurs, knowing and wanting to know, and as glad to answer as to ask. As editor of the "American Rose Annual," I find an increasing and most delightful social relation with these fine people everywhere. The Annual itself is, to be sure, of my assembling, but I am only the switchboard, the library, the post office, for these eager and acute rose-lovers of America. They make the Annual.

One valuable service to its members given by the American Rose Society is access to its "Committee of Consulting and Advising Rosarians," including rose authorities who cheerfully respond to any inquiries the members send them.

The growth of the American Rose Society has been rapid, and it is now in every state and province of the two great nations that make up America. As it continues, there is hope for much of stimulation and accomplishment in rose-growing and more pleasant possibilities in American roses.



PLATE XX. A Portland (Oregon) Rose-Garden. (See pages 103 and 222.)
From the "American Rose Annual," by permission.

The rose has acted as a great civic and social flux, as mentioned earlier in this volume in its relation to great parks. It also takes a high place in the work of those fine organizations, the Garden Clubs of America, which, whether they so announce it or not, are literally organized to fulfill the Psalmist's prophecy, in making not the desert, but our America, "blossom as the rose." These Garden Clubs, and similar organizations, are likewise putting the rose into circulation most effectively as they get school children to work.

During the Great War there came in an aggravated form an outburst of the thoughtlessness which considers all sweetness and beauty to be useless luxury. So there was an "economic" demand to cut off rose-growing, running parallel to an equally silly scheme to plant potatoes on all our lawns and golf-courses. Quickly it appeared that there was a definite patriotic and therapeutic value to beauty in the form of flowers, and especially in the form of roses. Many stories were told of the restful and heartening effect of even one rose amid the grime and horror of war, and the hospital experiences were even more to the point. There can be no doubt, now, of the value of a cluster of roses in the view of a hurt human—a

value not measured in calories but reflected in heart-soothing.

In Washington, D. C., the most popular section of the great garden surrounding the largest hospital in America, the Walter Reed United States Army General Hospital, is the rose part of it, for more convalescents use it.

It is a sad step to the inside of a great penal institution, but a step lightened by the healing social power of the rose. Elsewhere mention has been made of a projected prison rose-garden; here it is proper to say that there were roses to look at in Sing Sing one Christmas day—roses lovingly grown and tended and enjoyed by the convicts they were helping to heal.

But I am writing for thoughtful people, as rose-lovers come to be, and my message as to the social power and adequacy of the rose need hardly be extended. Let me only urge its wider social use—it always fits!

Let me say, too, in concluding this chapter and this book, that I am keenly conscious of its limitations, though encouraged to hope that it may be helpful, because the rose experience and rose study back of it have been helpful to me.

BOOKS ON ROSES

Of books representing American rose conditions, the following are in print:

THE AMERICAN ROSE ANNUAL, published by the American Rose Society in March of each year and edited by J. Horace McFarland, is a record of rose progress, available only to members of the Society. It usually includes 192 pages and some twenty inserted plates. Membership in the American Rose Society is \$3 per year, which may be remitted to the office of the Editor, Box 687, Harrisburg, Pa.

HOW TO GROW ROSES, by Robert Pyle. Thirteenth edition, completely revised and rewritten, 160 pages, plus sixteen inserted color plates and many illustrations in the text. Published by The Conard & Jones Company, West Grove, Pa. A beautiful book; up to date, definite, and helpful.

ROSES AND HOW TO GROW THEM, included in the "Garden Library" of Doubleday Page and Co.; revised 1923, 189 pages and many inserted plates. A terse manual of present-day practice in rose-growing.

THE PRACTICAL BOOK OF OUTDOOR ROSE GROWING, by Capt. George C. Thomas, Jr. 224 pages, plus fifty-six illustrations in color and black, published by J. B. Lippincott Co., Philadelphia. An excellent work, including matter not found elsewhere.

Among many English books on the rose, the following are valuable and interesting, though written from the British standpoint:

A BOOK ABOUT ROSES, by S. Reynolds (Dean) Hole. Last edition, with additional chapter by Dr. A. H. Williams; 324 pages. Published by Edward Arnold, London, but obtainable through any American bookseller. Delightfully readable, and the best of all books on the rose.

ROSES, THEIR HISTORY AND DEVELOPMENT, by Rev. J. H. Pemberton. 334 pages, with many illustrations in the text; published by Longmans, Green and Co., New York. A valuable book, both by reason of its contents and its style.

THE ROSE BOOK: A Complete Guide for Amateur Rose Growers, by H. H. Thomas. Fourth edition; 287 pages, with eight plates in color and forty in black. Funk & Wagnalls Co., New York.

THE BOOK OF THE ROSE, by Rev. A. Foster-Melliard. Fourth edition, edited by Rev. F. Page-Roberts and Herbert E. Molyneux. 356 pages, with illustrations in the text. The Macmillan Co., New York.

ROSE GARDENING, by Mary Hampdon. 231 pages, plus sixteen plates in color. American publishers, Charles Scribner's Sons, New York. Part of a series of gardening books, and of distinctly light weight.

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